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ABSTRACT

This report presents a plan for ongoing evaluation of the Creative Problem-Solving Curriculum for Undergraduates at UCLA. The curriculum is an important departure in the University's approach to the education of undergraduates. It provides an option for those students whose aims tend to be action-oriented. It is generally concerned with their competence as decisionmakers and effectuators, and is directed mainly to those intending to enter graduate professional training. The report describes the performance objectives for the program; the information flows of evaluative information; an abstract model of the curriculum and a corresponding picture of the way it is being actualized this year; behavioral objectives for students in the program; forms for collecting evaluative material from students, faculty members and outside advisors; a computer printout of that part of student evaluation of selected courses that can be dealt with objectively; and comments about how the evaluative information will be handled. (Author)

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PROFESSIONAL COMPETENCE CORE: AN INTERDISCIPLINARY CURRICULUM FOR UNDERGRADUATES--EVALUATION PACKAGE

September 1972

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PREFACE

"The Professional Competence Core--An Interdisciplinary Curriculum for Undergraduates" is also known as "The Creative Problem-Solving Curriculum for Undergraduates." The second title is used throughout this report. The report describes how the program is to be evaluated.

The curriculum has been initiated, developed, and guided by the deans of seven of the graduate professional schools at UCLA. They are:

Lester Breslow, and former Dean Lenor S. Goerke, Public Health
Maurice Connery, Social Welfare
John Goodlad, Education
Harvey Perloff, Architecture and Urban Planning
Murray Schwartz, Law
Chauncey Starr, Engineering and Applied Science
Harold Williams, Graduate School of Management

On behalf of all those involved in the program, the principal investigator expresses deep appreciation for the vision which led the deans to sponsor the program, the good will they have shown in its formative stages, and the substantial contributions they have made to its implementation. Appreciation is also due Deans Kenneth Trueblood of the College of Letters and Science, and Charles Speroni of the College of Fine Arts, who have joined the group of graduate school deans in helping to move the program in desirable directions.

The curriculum is intended to help prepare students to shoulder the responsibilities of professional and similar roles in a more competent, confident, and mature manner than has been typically possible heretofore. It is felt that this process should start at the undergraduate level if not before, and that it requires augmenting the education of undergraduates with experiences that are process-oriented (as distinguished from substance-oriented courses). The program spans most of the colleges and schools on the Los Angeles campus. It also spans the gap between undergraduate and graduate levels.

In these respects, we believe it is different from programs with similar objectives elsewhere. These features have accounted for much of its strength, but they have also contributed to the difficulty of "collective design." We would like to thank all of the students and faculty members who have contributed ideas, work, and patience to develop this evaluation plan.

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INTRODUCTION

This report represents a plan for ongoing evaluation of the Creative Problem-Solving Curriculum for Undergraduates at UCLA. The curriculum is an important departure in the University's approach to the education of undergraduates. It provides an option for those students whose aims tend to be action-oriented. It is generally concerned with their competence as decision-makers and effectuators, and is directed mainly to those intending to enter graduate professional training. Inasmuch as the context in which decisions and actions will occur is complex and constantly changing, it is important for the curriculum to be constantly in process of evaluation and redesign. It is for this reason that the evaluation plan takes on special significance.

1. Background of the curriculum.

In the late sixties, faculty from several UCLA graduate professional schools, prepared separate proposals for the creation and development of alternative undergraduate programs which would be valuable to action-oriented, decision-making future professionals.

In the summer of 1970 an independent sub-committee of UCLA's Goals Committee developed plans for experimental curricula in undergraduate education.

In June 1970, at the invitation of Harvey S. Perloff*, the deans of seven of the professional schools met to discuss the possibility of a joint effort to devise a new undergraduate program, focused on the problem-centered approach to education.

The idea was to provide an action-oriented curriculum alternative for students contemplating entry into a profession, while at the same time providing a needed innovation in undergraduate education.

The deans approved the preliminary concept and appointed an interdisciplinary faculty to work it through.

They also agreed that these original seven professional schools would offer to undergraduates during 1971-72, a sequence of "Momentum Courses," taught by selected professional school faculty. These courses enabled evaluative feedback, on an experimental scale, about the individual courses, the participating faculty, the student constituency, and the program direction. Additionally, the first momentum courses gave visibility to the program, established its reality, started students on indicative experiences, and created a process around which ideas and activities could systematically develop. While the program was originally conceived for, and primarily aimed at, pre-professional preparation, it presently has a wider participation and appeal. Through a planning grant received from the National Endowment for

*Dean, School of Architecture and Urban Planning

the Humanities, meetings and work sessions with outstanding faculty from the College of Letters and Science and the College of Fine Arts have been held, to search for methods and arrangements to integrate the humanities into the program. These meetings are continuing through September 1972. A report of the issues and recommendations which emerge from these intense interdisciplinary work sessions will be prepared in December 1972.

The Advanced Momentum Year 1972-73, will offer undergraduates an expanded set of courses which cover more of the categories in the Curriculum Model, and are taught by an enlarged cadre of faculty drawn from a broader base of participating Schools and Colleges.

Universities tend to conceive of undergraduate education in terms of academic departments. Degree requirements tend to refer to combinations of courses drawn from those disciplines. Students, on the other hand, frequently have educational objectives which do not map well into those departments. The bridge from knowledge to action tends to be incompletely implemented.

The CPSC is an attempt to create one such bridge. The CPSC does not replace a standard academic major. It is an adjunct to a major, providing students with an organized, goal-oriented suite of courses for satisfying some of their "breadth requirements" and electives. They are not relieved of the need for rigorous satisfaction of disciplinary requirements.

Students in the program may come from all majors within the university. While at the moment, any student admitted to the program may take any number of courses within it, we expect to set a minimum of three as soon as administrative arrangements can be made. Eight is expected to be a practical maximum. The specific choices, and the sequence in which they are to be taken will depend upon the student's background and interests, as well as the designed relationships among sets of courses. It is expected and intended that, generally speaking, those who opt for this program will be among the best students in each field. If "best" is well defined, the program should also serve some of those whose academic records may not, for various reasons, be outstanding, but who are strongly motivated, intellectually well-endowed, and willing to follow appropriate paths through the complex domain of the program offerings.

Some of the courses are devised especially for the program. Others are modified from present catalog offerings. Inclusion of a course depends upon agreement of the instructor and his department, not only that he will orient his course toward program objectives, but will participate in the subsequent design of the program as part of the program faculty. Students who take courses in the program are also required to meet with other students and faculty in the continuing evolution of the curriculum. In addition, both faculty and students

must agree to provide feedback information on courses and on the program as a whole, on which the directions for change are partially based.

Students toward whom the curriculum is aimed wish to move toward social roles that will exert considerable influence on the interests of others. The general character desired of incumbents of such roles, as judged by the originators of this program tend to include terms such as the following:

Student should be able to understand, feel comfortable with, and operate effectively in an environment characterized by:

Large scale of commitments, investments, threats, consequences.
Uncertainty and ambiguity in important decision situations.
Complexity and interaction of aspects of the world, including those at various levels of discourse.
Rapid change, including change of attitudes and aspirations of people, political structures, technological developments, and environmental events.
Multiplicity of values and kinds of power.
High degree of organization and institutionalization of interests and means.
A need to anticipate future states of affairs and the consequences of present actions and decisions.
The appearance of unexpected opportunities.
High rates of information transfer and knowledge generation.
Sustained importance of science and technology.
Attempts on many sides at manipulation of thought and behavior

He should:

Understand and appreciate diverse values and value systems.
Learn to learn and to think more effectively.
Become better able to use the established as well as newly available intellectual and other tools.
Understand how the system works at a number of levels and how to use it for his own and others' ends.
Understand how to change the system, the extent to which it can and will respond to attempts to change it, and the limits to its changeability.
Understand the implications of various kinds of balance between stability and change.
Understand and be comfortable with the need for accountability in an open system.
Not experience undue anxiety as he approaches progressively more demanding challenges.
Be oriented to achieve and contribute to society somehow.
Be able to integrate his experiences into meaningful wholes which go beyond the elements.
Be able to communicate effectively with others--including members of groups which are different from him ethnically, socio-economically, professionally, etc.
Enjoy and be able to profit from practical experience, and be

oriented to apply his knowledge and prior experience.
Strike a practical balance between cooperativeness and competitiveness.

(Note that the "content-free" appearance of the above objectives is qualified by the association of the curriculum with a standard "major" in all cases. Moreover, these objectives will be achieved through studies and projects on particular issues which "bring them down to earth." Decidedly, however, the curriculum is "process-oriented.")

What do terms such as those above mean in operation? How are such desiderata to be realized? That is the task of the curriculum design project. It requires inculcating skills in the use of intellectual tools and techniques, the generation of a degree of emotional maturity, self-awareness, and readiness to assume responsibility, plus exposure to practical affairs of the proper kind in a graded, progressive way. While such matters are not universally perceived as the main business of the university, they are completely consistent with its character. It is the business of the rest of this report to describe what the discussion above implies in practical terms.

2. Statement of the problem.

The program as it is designed at any time represents a hypothesis about the set of learning experiences that will best prepare those who will later occupy positions of authority and responsibility. It does not, in its early stages, have the sanction of long development and recognition, which standard courses and curricula do. What it does have behind it is a sound concept, a careful design effort which is broadly based across disciplines, a serious, systematic, and evolutionary approach, a commitment to quality, and an affirmative response from students so far. Its long-term value, however, is yet to be established empirically. Consequently, a conscientious program of evaluation and feedback is essential. The function of the evaluation program is to provide an ongoing test of the hypothesis.

The spirit of the evaluation plan is contrary to the "go--no go" approach that is sometimes attached to the term, "evaluation." The objective is not to decide whether to accept or reject the program, but to use the best resources available to create a program deemed likely to have the desired result, and then to use feedback to diagnose problems, and make the changes necessary to achieve that result better.

We perceive the need for a multi-indicator, diagnostic approach. "Multi-indicator" because no single figure of merit is sufficient for the various purposes for which the different interested parties will need the information; "diagnostic" because we know at the outset that there must be a discrepancy between what we can now offer--with very limited resources and severe time stringencies--and that which we would ideally offer to meet the challenge.

The curriculum, as an educational innovation and subsequently as an institutionalized development, is responsible and accountable to the students who participate in it; the faculty members who organize and teach in it; the university administration which supports it; the rest of the university community, of whose institution it becomes a part; other institutions of higher education, which may have some interest in adapting some of its features for their own use; and the community of actual and potential sponsors for portions of it, including the people of the state, the U.S. Office of Education, the National Endowments for the Humanities and the Arts, private foundations, and corporate and private donors. Hence it requires an administrative arrangement (preferably a simple one) to attend to its numerous interfaces. That administration, no matter how streamlined, will require a means for gathering and organizing the information it needs for its own decision-making, to be described below, and for reporting to others.

The many potentially interested parties are indicated in Table 2 . Each different group or person is likely to assign a different weight to each of a variety of measures of performance. Hence we have an obligation to supply the various measures so that they may be combined to suit each purpose. There is neither a need for, nor a useful possibility of, a single satisfactory scalar to sum up the program's value.

3. Tasks

The project consists of the following eleven tasks identified in the proposal:

1. The design of a simple information system for the collection, organization and accessing of both short and longer-term data relevant to program evaluation.

2. Modification of program contents and approaches in line with continuing analysis of the over-all program objectives.

3. Development of behavioral objectives having implications for the design of courses and modules, and for their sequencing; and generation of appropriate measures of performance.

4. Design of instruments to measure student attitudes towards the program and the instructors.

5. Design of instruments to record faculty members' observations about the program.

6. Design of a form for student evaluation of university education.

7. Formation of an advisory council of experts, both on this campus and elsewhere, and the devising of procedures to solicit and systematically utilize their advice and criticism.

8. Generation of a curriculum "model" to show relationships among behavioral objectives.

9. Development of a factor analytic procedure based on Q-technique to interrelate in meaningful ways the diverse behavioral and attitudinal changes that may occur, leading to testable hypotheses for further research.

10. Selection of a statistical design to identify sources of observed variability.

11. Possible use, on a pilot basis, of these instruments with students who have already participated to some extent in the program.

Work and results on these tasks will be discussed in the order given above. Conclusions on the program and its evaluation as a whole will be discussed at the end.

METHODS AND PROCEDURES

This was a design and research planning effort, so that the majority of the work was synthetic rather than analytical.

1. Students and professors participating in the program were asked to discuss the needs for and design of the curriculum. Notes on these discussions were transformed into progressively improved versions of the curriculum model, evaluation variables, and course ideas.

2. Individual faculty members from all parts of the campus were contacted based on their reputation among students and faculty for innovative and effective approaches to education. They were invited to make suggestions about various aspects of the program, and to suggest courses, methods, and arrangements that would improve the curriculum. Their views on measurement and evaluation were also solicited.

3. Several meetings of the Deans of the Graduate Professional Schools were held. Other individuals were invited to these meetings. The discussions clarified the intent of the sponsors, and enabled new ideas to be presented.

4. A preliminary analysis of currently offered courses in the program was transformed into a partial list of performance criteria. This was then expanded on the basis of the stated objectives to produce the table given in the text. (Table 5)

5. Several versions of a student data form, and student evaluation forms were constructed and tried. These were based on a) the need to have baseline data for later use in comparisons, and b) information from earlier efforts, both on this campus and elsewhere, as to the kinds of items that did and did not provide dependable information.

6. Expert consultants were used to provide guidance on approaches to and instruments for making the kinds of measurements that are appropriate to this scale and kind of educational effort.

7. Extensive research was conducted into related programs and the methods they use for evaluation.

8. A search was made for measuring instruments to cover the variety of items we deem important to measure. This was done through published sources, and through professional contacts.

9. An analysis was made of factor analytic programs available on this campus to determine which ones to apply to the kinds of data we can expect. The pro's and con's of each program were compared to produce the strategy given in the text.

10. A computer program was written to process the objective portion of the student evaluation forms. Analyses were run on eight of the courses offered last year for which adequate data were available.

11. A survey was made of last year's teaching faculty to determine the kinds of behavioral changes they expect their courses to make if offered again.

12. Discussions were held with potential advisers to the program, to solicit their participation on the Advisory Board.

RESULTS

Task 1. Design Information System.

A program of the scope and complexity of the Creative Problem-Solving Curriculum for Undergraduates requires constant and careful navigation and management. The needed management must rely upon a well designed and conscientiously maintained evaluation program. Task 1 of this project has been to develop an information system to support that program.

The most important distinction to draw, and one that is very elusive, is that between program evaluation information and course evaluation information. The program as a whole is intended to accomplish certain things; each course attempts to contribute to the satisfaction of selected program objectives. Among them, there will be overlap and redundancy. There will also be thin places, where objectives are not as well attended to as they should be. But the program as a whole will accomplish things that no course can: for example, it may change student attitudes toward the university; it may build the student's confidence that he can handle problems of various magnitudes; it may enable the student to draw generalizations of a higher order than any single course would; it can enable the formation of working groups of

students; it can institutionalize a new approach to undergraduate education, etc. Hence the program is not identical with the sum of the courses.

The first order of business is to get clear on what the basis will be for program evaluation. The answer, as of now, is given in Table 1. That table is arranged not in order of importance, but in chronological order, starting with admission and selection of students into graduate professional school, and going on to the more important, but perhaps less directly measurable indicators of program performance. When this information is augmented by an indication of where the data are to come from, and how frequently, and to whom and how frequently they are to be disseminated, it constitutes the major part of the information system description. The remaining parts are associated with identification of course performance objectives and how they will be judged in terms of performance measures as given below in Table 5 ; the baseline, or "before" data on students, which are routinely collected at the time a student first applies for admission to the program or one of its courses, using the form given in Appendix 1; and the various other pieces of information described in the subsequent sections of this report.

A few comments are needed as a guide to the interpretation of Table 1.

1. A list of the potentially interested recipients of information about program performance is given in Table 2 . The numbers associated with these recipients are the ones used in the last column of Table 1 as a concise description of the initial distribution plan.

A number of the criteria used in Table 1 are of the form $(X-\hat{X}) \overset{?}{\geq} 0$, versus the alternative hypothesis $(X-\hat{X})<0$. The "=" in the form of this hypothesis does not imply that we are shooting for no difference or effect; naturally, the greater the difference in the desirable direction the better. But we take the present level of university performance as the minimal standard which the new program must at least match. The $(X-\hat{X}) \geq 0$ is a one-tailed test under the assumption that desired differences, although they may be important, may not be detectable on small samples in the short run.

Note that the measures implied in the table are of two kinds: objectively measurable, and subject to judgment of competent judges. Normally, for the second type, the judges are either self-evident, or they are explicitly identified in the table.

It should be stated at once that while this table, and the rest of this report specify a large number of variables on which information is needed for evaluation purposes, the ability to gather, organize, and disseminate this information is partly an economic question. Some of the items are relatively easy to collect and disseminate. Others are very difficult and expensive. Hence the degree to which the plan can be implemented will depend upon the financial support it becomes possible to generate.

In reading Table 1, keep in mind that the curriculum is intended to have three classes of effect: on students, on the university, and on society. These are treated as sections 1, 2, and 3, respectively. The effects on students are of prime interest. The effects on the university are important instrumentally, as they enable effects on students and on society, but they also have to do with the changing role of the university as a community, as well as its comprehensibility and perhaps acceptability to its constituencies. The effects on society are both short- and long-term. To deal with the long-term effects is tenuous and to some extent pretentious. The kinds of societal effects wished for can be gleaned from the statements made about students and the university, as well as from the program rhetoric. To think that they would be measurable in a way that would make them attributable to this program strains credulity. Hence, the itemization having to do with societal effects is very attenuated, even though a great deal of thought went into the matter.

The table is arranged so as to facilitate later implementation of the evaluation plan. That is, individual items of information are identified separately, and the modes of their combination described. How they are to be interpreted is also indicated, and in most cases, the action to be taken is associated with each possible outcome. This information system description is, as stated earlier, subject to progressive modification as experience is gained, and additional people have a chance to review it and make recommendations.

TABLE 1

PROGRAM PERFORMANCE OBJECTIVES PLAN

Intended Effect On:	How Often Collected	To Whom & How Often Distributed
1. Students	(All measures collected annually when not otherwise specified.)	(All reports distributed annually when not otherwise specified. For program office use when not otherwise specified.)
1.1 Prepare students for graduate professional schools.		
1.1.1 At least match non-program students' application and admission rate to graduate professional schools of high quality.		
1.1.1.1 Rate of application to graduate professional school of program participants.		
1.1.1.2 Rate of application to graduate professional school of non-program participants (matched sample or all depending upon data available). (match on major field, GPA, and age.)		
1.1.1.3 Rate of acceptance to graduate professional school of program participants.		
1.1.1.4 Rate of acceptance to graduate professional school of non-program participants (matched or all).		
Kept as f(t).		
Data obtained from students and/or graduate schools.		
Interpretation: If $[(1.1.1.1)-(1.1.1.2)] \geq 0$, credit program. Otherwise explore reasons for low rate of application. Then either, a) explain valid reasons for low rate, e.g., employment <u>or</u> change selection procedures <u>or</u>		27, 14, 7

provide improved counseling, etc.

If [(1.1.1.3)-(1.1.1.4) ≥ 0, credit program. Otherwise, explore reasons for low rate of acceptance. Then either change selection procedures, or change curriculum content, method, organization or administrative procedures, or change liaison/communications with professional schools.

1.1.2	At least match non-program students' performance in graduate school.		27, 1, 29, 17, 16
1.1.2.1	Grade point average of program students in graduate professional school.		
1.1.2.2	Grade point average of non-program students in graduate professional school. Interpretation: If [(1.1.2.1)-(1.1.2.2) ≥ 0, credit program. Otherwise, explore reasons for lower performance and modify program accordingly.		
1.1.2.3	Similarly, rate of graduation from graduate school of program students should be ≥ the rate for non-program students.		27, 29, 17, 16, 15
1.1.2.4	Rate of early graduation from graduate school of program students should be ≥ the rate for non-program students.		
1.1.2.5	Graduate professional school faculty's ratings of program students on specified items, and overall, compared with other students. Items should include: motivation, maturity, performance, involvement, etc. Obtained from graduate schools annually and kept as f(t).	each academic year	1, 27, 17, 15, 14 quarterly to 1, 27 senior year to 17 annually to 14 when useful to 15

1.1.2.6 UCLA graduate professional school faculty's ratings of program students on items pertaining to performance in program courses run by other faculty members.	each academic year	1, 27, 14 quarterly to 1, 27 annually to 14
1.1.3 Former program students at least match former non-program students' ratings of their preparation for graduate professional school.		
1.1.3.1 Program students' later ratings of their preparation for graduate professional school.		
1.1.3.2 Non-program students' later ratings of their preparation for graduate professional school. Kept as f(t). Interpretation: If [(1.1.3.1)-(1.1.3.2) ≥ 0, credit program. Otherwise, explore reasons and modify program accordingly.		
1.1.4 At least match non-program students' scores on Graduate School Admissions Tests or other standard test instrument.		1, 27, 17, 16, 14
1.1.4.1 Program students' GSAT (any of the graduate school admission tests) mean score. Kept as f(t).	after each test date (3-5 times annually)	
1.1.4.2 Non-program students' GSAT (or other) mean score. Interpretation: If [(1.1.4.1)-(1.1.4.2) ≥ 0, credit program. Otherwise, analyze areas of deficiency and adjust curriculum or selection procedures accordingly.		
1.1.5 Gain at least as many scholarships, fellowships, assistships and honors as non-program students. (Treat categories separately.) From students annually and kept as f(t).		1, 27, 16, 14

1.1.6	Show some progress toward characteristics, skills, knowledge, and values deemed appropriate to professionals.	quarterly	quarterly
1.1.6.1	Scores on validated tests of these as f(t), compared with non-program students' scores as f(t). (Examples: see Tseng & Wales[1], etc.) For those lacking such tests, attempt to develop some. [Note: Effect of total program should be greater than effects of individual courses.] If on the average, differential progress is monotone increasing, credit the program. If not, explore the nature of and reasons for inflections, and correct.		
1.1.6.2	Mean scores on the appropriate tests for students who have taken n courses - mean scores for students who have taken only (n-1) courses. Expectation $M_n - M_{n-1} \geq 0$. If $M_n - M_{n-1} < 0$, the nth course is counterproductive; consideration should be given to shortening the curriculum. If $M_n - M_{n-1} \geq 0$, consideration should be given to extending the curriculum. In general, the difference will be different for different variables, so closer diagnosis needed.		

1.2 Provide a curriculum option which students find attractive and satisfactory.	each term	23, 27 quarterly
1.2.1 Program student ratings of program and courses, both absolutely and compared with other university experience. Items should include those in 1.1.6 plus others, so that there is a subjective as well as objective component to the evaluation process.	quarterly	23, 27 quarterly
1.2.2 Non-program students' ratings of their respective programs.		

Interpretation: If $[(1.2.1)-(1.2.2) \geq 0$, credit the program. If not, investigate reasons, adjust accordingly.

If $(1.2.1)-(1.2.2)]_{(t)} \geq [(1.2.1)-(1.2.2)]_{(t-1)}$, where (t) is the present year and (t-1) is the year just preceding, credit the program. If not, explore the reasons, and adjust accordingly. (Program should improve or at least hold its own from year to year, in terms of student attitudes toward it.)

1.2.3 Program student expectations of a given program course as compared with their ratings of what actually happens when it is offered. — quarterly — quarterly

1.2.3.1 For each course "i" judged by a criterion in dimension "j" in year "t",
$\bar{A}_{ijt} - \bar{E}_{ijt} \leq \bar{A}_{ij(t-1)} - \bar{E}_{ij(t-1)}$ · $\bar{A}_{ijt}$

is the mean rating of the actual behavior of course "i" on "j" in "t", and $\bar{E}_{ijt}$

is the mean expectation of students before and during the course.

Interpretation: the disparity between expectations and actual behavior of a course should not increase with time. Otherwise, investigate possible changes in the course or more effective orientation for students.

1.2.3.2 Expect that $\sum_{ij}[(A_{ijt} - E_{ijt}) - (A_{ij(t-1)} - E_{ij(t-1)})] \leq 0$.

Interpretation: if the program is functioning properly, all courses will satisfy the criterion of 1.2.3.1 and the program as a whole will satisfy 1.2.3.2 (which yields a single number). If this criterion is not met, search for those courses causing problems and correct as in 1.2.3.1.

1.2.4 Student's rating of the extent to which the program has added to his own development in directions that he considers desireable compared with his rating of the same in directions which he considers undesireable. — just prior to graduation

Interpretation: if there are any individuals for which changes have been predominantly undesireable, consider substantial changes in recruitment or other appropriate aspects of the program.

1.2.5	Number of students enrolling in program and in the respective courses in year (t). (Adjust for number of courses offered.)		
1.2.6	Number of students enrolling in program and in the respective courses in year (t-1). Enrollment should not drop as f(t). Interpretation: If [(1.2.3)-(1.2.4)] ≥ 0, credit the program. If not, investigate and adjust.		
1.2.7	Median number of program courses taken per student by graduation. Should not diminish as f(t).		
1.2.8	Student ratings of quality of other students in the program - student ratings of matched fellow students not in the program. Should be and remain ≥ 0. If < 0, investigate, change recruiting and selection procedures and/or course content and/or structures; and/or solicit student suggestions.	quarterly	27, 23, 10, 11, 5 quarterly to 27
1.2.9	Number of students who had program (or courses) recommended by other students. Should not decrease as f(t). Obtained from student questionnaires at start of first course student takes in program.	quarterly	10, 27

1.2.10 Degree of confidence expressed by CPSP students in CPSP performance measures and procedures (comprehensive, relevant, sensitive, humane, etc.): a) as compared with confidence in typical university performance measures and procedures measures; b) as compared with confidence of non-CPSP students in typical university performance. P $\stackrel{?}{\geq}$ NP; c) as a function of how long students have participated in program. Should not decrease as f(t). If not positively correlated, investigate and modify performance measures or procedures.	quarterly or twice annually	10, 11, 27, 23, 12 quarterly to 12, 11
1.2.11 CPSP students' attitudes toward university education in general should be at least as favorable as non-CPSP'ers.		
1.2.11.1 Mean CPSP student rating of university education - mean non-CPSP students' ratings $\stackrel{?}{\geq}$ 0. If not, investigate and make needed adjustments.		
1.3 Prepare better decision-makers and effectuators.		
1.3.1 Student ratings of their own capabilities (see list of desiderata). Annually while at, and after leaving, UCLA.		1, 27, 17, 14, 16, 20, 21
1.3.2 Student willingness to attribute this kind of learning to the program.		
1.3.3 Quality of students' "products" (see explanation of dossier formation).	quarterly or as projects are completed	1, 27
1.3.3.1 As judged by faculty members (Note: participating faculty normally also teach non-program courses.).		quarterly to 1, 27
1.3.3.2 As judged by outside referees.	annually or when projects are completed	quarterly to 1, 27

1.3.3.3 As judged by a panel of other students (who have previously taken the respective courses).	when projects are completed	quarterly to 1, 27
1.3.4 Student performance in complex problem-solving exercise which produces performance scores. "Gaku", "Shimoku" and other man-computer exercises. "APEX," "City," and other complex, "realistic" games. Exercises at Center for Computer-Based Behavioral Studies.	1-3 times during 4 undergraduate years	1, 27
1.3.5 Student performance in practicum course(s) at end of program, as judged by a) instructor, b) other students, c) outside referees.	end of course(s)	10, 1, 2
1.3.6 Student ratings by supervisors during "internships"	during and at end of internship	
1.3.7 Mean number of "quality" publications per program student per year - mean number of publications per matched non-program student per year. $P \stackrel{?}{\geq} NP$.		1, 27
1.3.7.1 Quality of student published writings as judged by panels named in 1.3.5.		
1.3.8 Demand for student interns from the program. $N_t - N_{(t-1)} \geq 0$. Demand should not drop as f(t). Note, especially, demand from agencies which have had program students previously.		27, 30, 10, 11, 18, 24, 28
1.3.9 Program students should tend to make use of summers and non-school time to innovate, initiate, participate in "problem-solving" projects and activities--at least as well as non-program students.		10, 11, 1, 18, 24, 30, 27
1.3.9.1 Evaluation (possibly non-quantitative) of CPSP student response to question, "What are the (three) most effective contributions to society you have made outside of your school work?"		

1.3.9.2 Evaluation (possibly non-quantitive) of matched non-CPSP student response to question, "What are the (three) most effective contributions to society you have made outside of your school work?"

as entering freshmen and graduating seniors

Interpretation: If 1.3.9.1 shows more effective use of time, more frequent use of CPSP-oriented skills in non-school activities, and more unusual accomplishments than 1.3.9.2, credit program. Otherwise, explore reasons for lack of motivation, creativity, etc., and modify program accordingly.

1.3.10 Assessment of nature of post-graduate employment, with criteria focusing on decision-making, action-taking, innovating and other problem-solving skills.

1.3.10.1 Former CPSP student self-appraisal of his occupation and his ability/opportunity to utilize CPSP-oriented skills. (Data collected separately for each cohort.)

Interpretation: In terms of long-term or permanent effects of program on thought/behavior patterns of participating students, response of 1.3.10.1 should indicate: a) involvement in "higher-level" decisions; b) greater satisfaction with decision outcomes; c) enhanced sense of attractive opportunities available; d) higher personal dollar income and/or psychic income from involvements.

1.3.11 Assessment of attitudes, awareness and motivation of former students to respond to societal, as contrasted with personal needs (before and after leaving UCLA).

as freshmen, seniors, and 5-10 years after graduation

27

1.3.11.1	Former CPSP student attitude and awareness of current societalproblems/needs, as measured by testing or questionnaire. Evaluation of accomplishments which reflect self-motivated concern and ability to mobilize relevant forces to produce desired results.	as freshmen, seniors, and 5-10 years after graduation	27
1.3.11.2	Non-program student attitude and awareness of current societal problems/needs, as measured by testing or questionnaire. Evaluation of accomplishments which reflect self-motivated concern and ability to mobilize relevant forces to produce desired results. Interpretation: If comparison of 1.3.11.1 and 1.3.11.2 indicates that heightened awareness at college age has significantly affected tendency to self-teach, explore and otherwise self-motivate to operate in the realm of societal needs and social change, credit program. Otherwise, modify program to stimulate more active than passive responsiveness to social problems.		

2. (Effects on) <u>University</u>

2.1 Provide a specialized learning environment.

2.1.1	Involve students in a serious study of principles, skills, methods, and philosophies critical to fulfilling important current and emerging roles in the society.		
2.1.1.1	Evaluate participating students' feelings about program (see 1.2) and its relevance to what they see as their potential social roles. If CPSP students seriously pursue what they feel is a particularly relevant course of study (filling most breadth requirements & electives) program is succeeding. Otherwise, investigate the gap between level of student involvement in CPSP and the expectations.		27, 1, 10, 12

	of the program's planners and administrators; modify the program accordingly.		
2.1.1.2	CPSP faculty and advisors compare program and matched non-program student involvement in studies, projects, etc. Program's students should be at least as involved in School and related activities and projects as non-program students.		27, 10, 12, 1
2.1.2	CPSP courses should utilize techniques which extend learning beyond what results from the usual undergraduate experience.		27, 12, 13, 17, 10, 11
2.1.2.1	Inventory and evaluation by students and faculty of teaching techniques used in CPSP, both as compared with techniques used in non-CPSP university courses and in relation to the specific learning objectives of the program. If CPSP's approach to teaching and learning is not perceptibly different from what students experience elsewhere, explore reasons and options.	quarterly or annually	periodically as needs arise, and annually
2.1.3	Provide opportunities for students to learn how to handle information and how to think effectively and independently in a real-world setting.		
2.1.3.1	Number of off-campus internships which program can score should increase as a f(t). Otherwise, investigate and make appropriate changes.		27, 20, 10
2.1.3.2	Quality and value of internship experiences to personal development as assessed by CPSP students should rank exceptionally well on an absolute scale and relative to other university experiences. Otherwise, change process for establishing internships, preparing students, etc.	while internship is in progress, at end of internship, and at graduation	27
2.1.3.3	Number of student participants in projects (on and off campus) sponsored by, supervised by, or		27

	cooperating with CPSP. Should increase with time absolutely and as percent of total CPSP student enrollment. Otherwise, investigate and make appropriate changes.		
2.1.4	Attract creative, productive, excited students and faculty to participation in the program.		
2.1.4.1	CPSP student attitudes toward CPSP faculty and students, compared with attitude of non-program students toward their professors and fellow students. If CPSP participants do not feel at least as much excitement in their own sector of campus as do other students, investigate reasons, modify program.	each quarter	27, 10, 11, 12, 13, 16, 23
2.1.4.2	CPSP faculty attitudes toward CPSP faculty and students. Compare with attitudes of non-program faculty toward their students and fellow professors. CPSP faculty should feel at least as much excitement about their work and the people they work with as do non-CPSP faculty.	after each quarter	27, 10, 11, 12, 13, 16, 23
2.1.5	Facilitate development of interpersonal relationships which foster cooperative learning outside the classroom.		
2.1.5.1	Analysis of competitive/cooperative relationships among students. CPSP students should tend at least as often as non-program students to meet and work with fellow students outside of the classroom. Otherwise, program should be modified.		27
2.1.5.2	Feelings of CPSP students towards other students (both CPSP and non-CPSP students) with regard to frienship, trust, confidence in abilities, etc. If CPSP students (as compared with non-CPSP students) show more insight and caring and are otherwise more positively oriented towards their fellow students, credit the program. Otherwise,		

change the program.

2.1.5.3	Degree of closeness between CPSP faculty and students. If more frequent personal contacts exist between students and faculty of CPSP than in the general university, credit the program. Measured by comparing average number of contacts, joint projects, personal statements, etc.		10, 12, 27
2.1.5.4	Degree of closeness among members of CPSP faculty should be at least as great as the characteristic for the general university. Measured by comparing number of contacts between faculty, number of joint projects, etc.		12, 27
2.1.6	Achieve satisfactory rating by UCLA (and other?) graduate professional school faculty for the curriculum design.		
2.1.6.1	Annotated description of curriculum rated annually by professional school faculty members who are: a) not participating in CPSP and b) are participating in CPSP. Kept as a function of time. Suggestions for change solicited for use by program faculty in program evolution.		27, 16, 17, 14
2.1.7	Achieve satisfactory ratings by national advisory board. Kept as a function of time.		27, 16, 17, 14
2.2	Establish a working environment which instructors find attractive and satisfying.		
2.2.1	Program faculty ratings of program and courses, both absolutely compared with other university experience. Items should include freedom to experiment, financial and other resources available for effective CPSP participation, professional prestige, creative	quarterly, annually	12, 13, 27, 16, 14 quarterly to 13, 27. annually to 12, 14, 16

	stimulation, enjoyment of participation, feelings of security/insecurity, perceived response by rest of University, etc.		
2.2.2	Non-program faculty ratings of their respective programs. CPSP faculty program ratings should be at least as strong as respective non-CPSP faculty program ratings, and should remain constant or improve with time. If this is not the case, reasons should be determined and changes made.		27, 12, 13, 16, 14
2.2.3	Number of faculty seeking participation in program in year (t) as compared with year (t-1). If faculty size and interested faculty applicants do not decrease in number as a function of time, credit the program. Otherwise, investigate and modify.		27, 20, 16, 15, 21
2.2.4	Student and faculty ratings of quality of other faculty in the program - student and faculty ratings of faculty not in the program. Should remain ≥ 0. If less than zero, investigate, change recruiting and selection procedures and criteria and solicit suggestions for same from students and faculty.		10, 12, 27
2.2.5	Portion of campus faculty aware of CPSP purpose, design, population, offerings. Should increase with time. Otherwise, investigate publicity and modify.		27 when information becomes available
2.2.6	Portion of campus faculty aware of CPSP and favorably impressed with program. Should increase with time. Otherwise, investigate publicity. Solicit comments, reasons for unfavorable attitudes, etc., and modify program and/or publicity.		27
2.2.7	Attitudes of CPSP faculty toward CPSP students (competence, motivation, creativity, etc.) should equal or surpass attitudes of non-CPSP faculty toward their students. If not, investigate. Modify procedures for students.	quarterly	

2.3 Maintain an efficient program evaluation and redesign mechanism.

2.3.1 Program participants' (students, faculty, administrators, etc.) complaints and criticisms should be confronted and resolved with greater rapidity and effectiveness with each passing year.

2.3.1.1 How long does it take for improvements to move from the conceptual to the actual; i.e., what is the number and significance of complaints/ criticisms of a previous quarter (year) that remain unresolved in a given quarter (year)? Should dimish as f(t). Otherwise, investigate changes in CPSP's system for analyzing and acting on criticism.	continuous monitoring	27 when information becomes available
2.3.1.2 How do feelings of CPSP students, faculty, staff, etc. regarding responsiveness of program directors to suggestions for improvement compare with feelings of non-CPSP people for their respective departments? If not at least as good, investigate and implement ways to make system more responsive.		
2.3.1.3 How does the "on-paper" design of the program in year (t) compare with year (t-1) on the basis of organization, cohesiveness, completeness, justifiability, viability, etc. If improvement not apparent, investigate and implement more effective design mechanism.		

3. (Effects on) Society

3.1 Demonstrate University's response to emerging social needs.

3.1.1 Create a good working interface with outside organizations.

3.1.1.1	Number of interns placed in community organizations in year (t-1) - number in year (t) should be ≥ 0. Otherwise, investigate reasons and modify internship program accordingly.		27
3.1.1.2	Ratings of performance of CPSP interns by employers/supervisors should not decrease over time. Otherwise, investigate dissatisfactions and modify internship program accordingly.	during and after each internship	1, 27 when information becomes available
3.1.1.3	Number of off-campus programs seeking CPSP consultation or cooperation for various purposes should be non-decreasing over time.		28, 27, 24, 21, 17, 16, 15, 14
3.1.1.4	Ratings (quality and quantity) of publicity in the mass media attracted by CPSP should increase with time.	continuous monitoring	27, 14, 16
3.1.2	Evidence of social change resulting from CPSP efforts should increase with time.		27, 14, 16, 10, 12
3.1.2.1	Number of people involved and quality and effectiveness of CPSP's community-oriented projects should increase with time.		
3.2	Demonstrate society's (community's) response to the program.		
3.2.1	Mean number of job offers received by CPSP students and former CPSP students.		
3.2.2	Mean number of job offers received by matched non-program students.		
	$[(3.2.1)-(3.2.2)] \stackrel{?}{\geq} 0.$		
3.2.3	Number of requests for program information from other institutions. $N_t - N_{(t-1)} \geq 0$ for at least 5 years.		
3.2.4	Number of similar programs implemented at other institutions should be non-decreasing with time.		

TABLE 2

Information Points Key

1. Individual student file/dossier
2. Individual CPSP transcript
3. Computer file
4. CPSP bulletin/information board
5. Peer evaluations
6. CPSP newsletter
7. Graduate programs file
8. Planned interview counsellor
9. Professor evaluation file
10. Participating students
11. Non-participating students
12. Participating faculty
13. Non-participating faculty
14. Involved Deans
15. Funding sources
16. Campus administrators
17. Off campus educational institutions
18. Industry, professional groups
19. Key personalities in related fields
20. UCLA committees
21. CED
22. Identified student groups
23. Course & professor evaluation office
24. Government agencies
25. Extended University
26. Non-university program participants
27. Program staff and administrators
28. UCLA Alumni Association
29. Vice Chancellor, Innovative Programs Office
30. EXPO office (interns)

Task 2. Modify Curriculum Content and Methods

Task 8. Generate Curriculum Model to Show Interrelationships Among Courses/Modules

These two tasks were combined during the course of the work. The molecular entries in the list of curriculum contents with which we were working at the outset of the project appeared to take on meaning primarily in the context of a) over-all program objectives, and b) course experiences which would embody them. The result of this effort is a distilling down, rather than an expansion of material quantity. The result is given as Tables 3 and 4. These are, respectively a schematic representation of the curriculum as now conceived, and its present actualization.

Turning first to the schematic, Table 3. The student's experience should start with an introduction to patterns of problem-seeking and problem-solving, which lays a base for subsequent experiences. It should end with at least one practicum course in which he learns to apply what he has learned to a concrete situation of interest to him. (Note that further practicum may well be encountered in subsequent graduate school experiences.) This practicum is also useful as short-term evidence of the curriculum's effectiveness. In between are three clusters of courses: The Knowledge Base; Tools and Skills; and Personal and Group Approaches, as well as exposure to professional problem-solving approaches in various fields. The contents of these clusters are indicated to the right of the headings. With this brief introduction to the curriculum, the next section of this report details the behavioral objectives which have been identified so far. Taken together, these define what is intended in the curriculum model, so that no further explanation is offered here. Turning now to the Actual Curriculum, Table 4, fifteen courses so far lined up for this year are "located," approximately, on the "map" of the schematic curriculum. Course descriptions of these are not included here as they are outside the scope of this contract. However, a sense of what they include can be obtained from Table 5 where behavioral objectives are associated with each of the eight major categories which carry Roman numerals in the curriculum model chart.

TABLE 3: SCHEMATIC CURRICULUM IN CREATIVE PROBLEM-SOLVING

August 1972

I.	Introduction & Overview (Required): Introduction to Patterns of Problem-Solving				
	Knowledge Base:				
II.	"How the System Works"	Political Processes & Art of the Possible	How the Social System Works	The University as a System	
III.	Problem-Solving Knowledge Base	Value Systems - Ethical and Moral Foundations	Traditional & Contemporary Issues & Dilemmas	Organizational Behavior	Culture & Sub-Cultures
	Tools and Skills:				
IV.	Mathematical Tools and Skills	Rational Approaches to Uncertainty & Complexity	Systems Analysis, Modeling & Operations Research	Computer Tools & Techniques	
V.	Non-Quantitative & Semi-Quantitative Tools & Skills	Research Strategy & Pragmatics	Forecasting & Futures Studies	Management Concepts & Techniques	Media and Communication Skills
VI.	Personal and Group Approaches	Comparative Problem-Solving Styles & Approaches	Cognitive & non-Cognitive Growth Processes	Group Dynamics & Development	
VII.	Problem-Solving Approaches in Various Fields	Problem-Solving Approaches in the Professions	Problem-Solving Approaches in the Humanities	Problem-Solving Approaches in the Sciences	
VIII.	A Focused Problem-Solving Practicum (Bringing the above together into practice. (Required)	A Group Workshop Project in the University	Supervised Internship (or Apprenticeship)	A Community Project	A Group Research Project

TABLE 4: ACTUAL CURRICULUM IN CREATIVE PROBLEM-SOLVING

August 1972

I.	Introduction & Overview (Required): Patterns of Problem-Solving (M. Rubinstein)			
	Knowledge Base:			
II.	"How the System Works"	Political Science 186, National Politics and Administration (P. Halpern)	The Community as People (N. Cohen & R. Steinberg)	
III.	Problem-Solving Knowledge Base	Ethics: "Moral Foundations for Social Action" (T. Hill & D. Wikler)	Humanities 110, Man and His Fictions (D. Marshall)	
	Tools and Skills			
IV.	Mathematical Tools and Skills	Rational Approaches to Uncertainty & Complexity (J. Jackson)	Information Processing Systems (L. Kleinrock)	
V.	Non-Quantitative and Semi-quantitative Tools & Skills		Imaging the Future (M. Adelson)	Speech & Community Groups (R. Richardson)
VI.	Personal & Group Approaches	Styles of Problem-Solving (S. Culbert)	Personal Awareness & Cognitive Growth (C. Rusch)	
VII.	Problem-Solving Approaches in Various Fields	Man & His Environment: "Coping with the Problems of the Changing City: (H. Perloff & SAUP faculty)	Problem-Solving in Health Fields	Problem-Solving in the Social Sciences Using Physical Science Methodology (H. Reiss)
VIII.	A Focused Problem-Solving Practicum (Bringing the above together into practice. (Required)	Applied Patterns of Problem-Solving: A Workshop (M. Rubinstein)		

Task 3. Behavioral Objectives

We have seen in Table 1 what is expected of the curriculum as a whole. At this point, we must ask by what means those objectives are to be achieved. The general character of the implementation has already been conveyed by the curriculum descriptions given in Tables 3 and 4, but a more thorough indication is given in Table 5, which lists behavioral objectives for the courses, individually and collectively. While this list is extensive, it is not to be considered complete. No list of behavioral objectives can cover all of the intended outcomes of this curriculum (or perhaps any other, for that matter.) It is important to appreciate the operational point of view which leads to enumerating such objectives, but equally important to realize its limitations. Explicit behavioral objectives can orient the efforts of faculty members and others who might otherwise misunderstand or unnecessarily disagree about what is intended; but they do not exhaust what is intended, some of which may not be practically or usefully measurable by usual formal methods. But more to the point, one of the intentions of this curriculum is individualization -- a process by which each person becomes more unique, in keeping with his own "virtù" (an ancient term referring to both his powers or abilities and also his special characteristics -- a term which perhaps has been missing from educational dialogue and deserves to be revived.) Clearly, the result of such a process cannot be specified in advance. And the degree to which the judgment of the individual should be weighted, compared to that of other observers, in determining the extent to which it has occurred, varies from case to case.

Keeping in mind that not all desiderata will be readily measurable, we must still proceed with those which can be measured. As mentioned before, those listed in Table 5 constitute a complex hypothesis as to what will achieve the macro- or program objectives of Table 1. That hypothesis is only a first approximation: it is very difficult to generate an adequate list of behavioral objectives. Instructors tend to be unpracticed at it. But it is our hope that they will improve through this program, and that the results will evolve well. The "hypothesis" is subject to continual reexamination and revision, based both on the evidence of earlier performance and on possibly changed conditions. The individual behavioral or micro-objectives must be regarded as themselves variables, whose choice is subject to change as the macro-objectives are modified, Insights are gained about relevance of different kinds of material, and the relevant knowledge, tools, techniques, and expectations advance. The performance requirements listed in Table 5 do not imply that all of the capabilities desired must be gained within the program nor that they are anything but performance minima. In connection with the mathematical items, for example, students may demonstrate proficiency by examination or proof o prior courses of an appropriate kind, and either substitute other courses instead, or else go more deeply into the material. Those coming from fields not emphasizing mathematical skills will still be required to develop literacy and a modicum of facility with at least some mathematical tools.

Not all of the objectives listed map well into performance measures, despite the effort that has gone into making them measurable. In general, they will have to be associated with measures by each instructor whose course impinges on the objective, and be attuned to the situation of the course(s). However, an innovative scheme will be tried, the dossier record, and the "legacy."

Briefly, the program office will organize a file of student dossiers. Each dossier will contain those products of each student by which he wishes his work in the program, or related to it, to be judged. It might contain models, mathematical derivations or proofs, proposals for projects, project final reports, photographs of work done, essays, or any other artifacts the student deems suitable. He may insert materials into the dossier at any time; he may also delete items as they are superseded by better work, or for any other reason. The material in the dossier will be releasable by the student at his discretion to any person or organization who has a need to make a judgment of his performance. It will be regularly used by the program as a source of evaluative feedback.

In addition, students will be expected to leave a "legacy" to their successors. This, too, may take various forms. For example, they may develop a useful computer program; they may generate a questionnaire to gather a certain kind of information; they may collect and organize a useful body of data; they may uncover an improvement in a problem-solving procedure; or they may simply have suggestions to make to other students about how to get the most out of a given course of set of courses. Whatever form it takes, their products should be useful to others in some way, and they will be prevailed upon to leave their products in good order for the use of others. Hence, one of the things they may leave is an improvement in the means of organizing and passing on such results. The growing body of such products should provide one basis for judging the value of the program, and of the individual's contribution to it.

TABLE 5: BEHAVIORAL OBJECTIVES

I. Introduction & Overview

1. Be able to discuss the objectives of the Creative Problem-Solving Curriculum, describing its differences from other university offerings, and establishing its relevance to his own objectives.

2. Be able to make formal statements (hypotheses or generalizations) which are testable.

3. Be able to formulate a problem in researchable form.

4. Given a complex set of events, be able to discern some useful pattern in them. Given a recognizable pattern in a set of events, be able to construct a useful generalization therefrom.

5. Given problems of comparable difficulty and substantial complexity at the beginning and end of the course (program) to be solved in a fixed time, provide a much better solution at the end than at the beginning.

II. "How the System Works"

1. Demonstrate a thorough knowledge of the workings of at least one important system (e.g., a university, a political system, a community, an industrial firm, a bank, a government agency, etc.).

2. Be able to state the functional components and processes of a given operational system, e.g., legal system; political system; social system; economic system; educational system?

3. Show understanding of how decisions are actually made in organizations, and the forces impinging on them. Indicate how he would attempt to influence such a decision if he felt it was necessary.

4. Be able to describe the overt and tacit information system of a community.

5. Describe adequately how a community could go about becoming and staying better informed than it now is about important matters that affect its activities and its future development.

6. Be able to make recommendations which would increase the effectiveness or efficiency of a given information system.

7. Explain why profit is a socially desirable feature of business. Explain why it is socially undesirable. Be able to make both cases effectively.

8. Be able to describe the close relationship between the problems of individuals in society, and the problems of policy formation and implementation in government and private organizations.

9. Show an appreciation of the values of stability and change by differentiating, in a given environment, between institutions or entities which it would be desirable to change markedly, and those it would be undesirable to change markedly.

10. Show an appreciation of the values and costs associated with creating organizations to get things done.

    a) in an industrial context
    b) in a governmental context
    c) in a community context

11. Understand and be able to state how different roles (e.g., manager, accountant, client, investor, subcontractor) tend to lead to different models of a situation and hence possibly to different courses of action.

III. Probem-Solving Knowledge Base

1. Given differing major political philosophies, write a creditable critique of the relation of their positions to a present societal issue.

2. Describe some of the moral and ethical foundations of decision and action applicable to a given situation and show their philosophical and historical derivations.

3. Be able to identify and distinguish among important psychological classification systems (e.g., Maslow's, Freud's, Piaget's, etc.).

4. Demonstrate an appreciation of the differences between his own culture and others which are substantially different with regard to an indicated area of activity.

5. Be able to state and exemplify the costs paid by organizations to a) maintain themselves, and b) fulfill the personal objectives of their decision-makers (organizational politics).

6. Be able to recognize and state how the needs of people in various kinds of communities affect design projects, and how to take account of them. Be able to document at least one personal experience which dramatizes these dynamics.

7. Be able to outline the development of the traditional viewpoint on a specific issue.

8. Be able to state alternative viewpoints to the traditional one.

9. Be able to state the reasons for divergent views.

10. Be able to incorporate both in an original essay on the subject.

11. Be able to state formulations or viewpoints toward several important social issues that he considers to be original with him.

12. Be able to state the prospective value of his original views and be able to trace their genesis and development.

IV. Mathematical Tools and Skills

1. Be able to use the tools of verification--evidence and logic--to determine whether to accept or reject a hypothesis as a basis for action.

2. Understand both the power of data and models in analysis and design, and also their limitations as representations of "reality." Be able to explain this on paper.

3. Be able to answer correctly the following questions with respect to a given example of <u>statistical evidence</u>:

   a) was the evidence gathered properly?
   b) are the units compared actually comparable?
   c) are the statistics really indicative of what you want to know or learn?
   d) are the statistics presented in their most meaningful form?
   e) are the statistics complete?
   f) are the statistics reliable?
   g) how could the statistics be misleading?

4. Be able to define and demonstrate understanding of the concepts:

central tendency	regression coefficient
mean	expected value
median	law of large numbers
mode	central limit theorem
variance	percentile
standard deviation	spurious correlation
test of significance	representative
correlation	sample size in relation to variability
error	stratification
validity	population
reliability	statistic
significance level	parameter
confidence level	

5. Explain the meaning and importance of Bayes' theorem.

6. Demonstrate a command of the basic ideas and uses of these mathematical concepts: element, set, relation, subset, proper subset, product, sum, identity, vector, matrix, add, multiply, measure, function, etc.

7. Be able to describe, diagram, and represent mathematically the concept of feedback.

8. Distinguish between positive and negative feedbacks, and exemplify each.

9. Be able to show how the concept of feedback appears importantly in at least three different professional fields.

10. Write a linear program for a specified problem.

11. Produce a "decision tree" for a specified decision problem, and show how to "solve" it.

12. Show literacy in at least one computer language.

13. Show evidence of having successfully used the university computer.

14. Be able to describe and identify the limits to the usefulness of the cost-benefit approach.

15. Cost benefit considerations: Be able to identify the cost to society in terms of <u>alternatives foregone</u> of adopting a particular solution to a problem.

    a) identify the monetary outlays associated with a particular solution (specified)
    b) identify the second best alternative to which each of the resources could have been put

    Estimate what the given solution offers to society in the short, intermediate, and long run, including both the prospective benefits and disbenefits.

16. Describe the concepts of extrapolation, prediction, and forecasting, and show how they can be used to improve the operation of at least three complex sociotechnical systems.

17. Be able to describe at least six methods or techniques useful for forecasting or futures-anticipation. Be able to apply at least two of them in a given situation.

18. Show an adequate familiarity with the concepts of the differential and integral calculus. Given a real or hypothetical system, be able to represent dynamic processes with fundamental models based on differential equations, and be able to internalize the meaning of such a representation.

19. Possess an adequate level of numeracy, the ability to perceive numbers in their meanings. To perceive numbers as descriptors, as adjectives, rather than as mysterious symbols to be manipulated. Be able to estimate common and uncommon magnitudes of physical things. Believe that math is often as easy way to describe something.

20. Show an adequate familiarity with the rudiments of probability and probabilistic modeling. Given a real or hypothetical system, be able to assign reasonable probability estimates to potential outcomes and use the estimates for other decision processes.

21. Be able to understand the structure of logical arguments. Have an adequate familiarity with the basics of formal logic. Be able to understand arguments based on indirect demonstrations of truth, e.g., disproving the contrapositive. Understand and be able to use the concept of implication without causal implication: correlation does not imply causation.

V. Non-Quantitative and Semi-Quantitative Tools & Skills

1. Be able to define and explain the relevance of the terms "systems," subsystem, element, environment, complexity, relatedness, teleology, cybernetics, entropy.

2. Be able to state, define, and explain the relevance of the terminology of problem-solving and systems analysis.

3. Have gained practical experience in at least one major communications medium (e.g., newspaper, radio, TV, theater, recording, film).

4. Demonstrate command of basic economic concepts. Describe the relations between supply, demand, price, etc. of a commodity. Enumerate the elements of cost of production.

5. Show how to decide when to replace a piece of equipment, (e.g., an automobile). Indicate the considerations involved, how to quantify them, and what information you need but don't have.

6. Be comfortable reasoning by analogy, especially about the form of problems acress fields. Show ability to find useful analogies, and to detect dissimilarities and points of doubt in their applicability.

7. Given a specific problem context, be able to discern the relevant information in a mass of facts containing a great deal of irrelevant information.

8. Be able to sketch or otherwise graphically portray the relevant structure of a problem situation or system,

   a) to demonstrate understanding, and
   b) to communicate with others

9. Given a project plan, write a credible budget.

10. Define and discuss the term "overhead" in a budgeting context.

11. Given a project description, write a simple PERT chart (or

20. Show an adequate familiarity with the rudiments of probability and probabilistic modeling. Given a real or hypothetical system, be able to assign reasonable probability estimates to potential outcomes and use the estimates for other decision processes.

21. Be able to understand the structure of logical arguments. Have an adequate familiarity with the basics of formal logic. Be able to understand arguments based on indirect demonstrations of truth, e.g., disproving the contrapositive. Understand and be able to use the concept of implication without causal implication: correlation does not imply causation.

V. Non-Quantitative and Semi-Quantitative Tools & Skills

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4. Demonstrate command of basic economic concepts. Describe the relations between supply, demand, price, etc. of a commodity. Enumerate the elements of cost of production.

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6. Be comfortable reasoning by analogy, especially about the form of problems acress fields. Show ability to find useful analogies, and to detect dissimilarities and points of doubt in their applicability.

7. Given a specific problem context, be able to discern the relevant information in a mass of facts containing a great deal of irrelevant information.

8. Be able to sketch or otherwise graphically portray the relevant structure of a problem situation or system,

   a) to demonstrate understanding, and
   b) to communicate with others

9. Given a project plan, write a credible budget.

10. Define and discuss the term "overhead" in a budgeting context.

11. Given a project description, write a simple PERT chart (or

equivalent in some other system of critical-path programming).

12. Be able to describe the relationship of a given problem to a theoretical framework or to previous research.

13. Be able to classify correctly a given instance under one or more of several alternative, possibly applicable, rules, or categories.

14. Be able to answer correctly the following questions with respect to a given example of deductive reasoning:

    a) are the premises well formed?
    b) are they valid?
    c) does the conclusion necessarily follow from the premises?

15. Be able to answer correctly the following questions with respect to a given example of <u>inductive reasoning</u>:

    a) how many instances have been observed?
    b) is this a large or a small number? why?
    c) Are there any counterexamples? exceptions?
    d) are the instances fairly representative of their class?
    e) have they been chosen to support a preconceived idea?
    f) can you construct an experimental situation which you think would produce a counterexample?
    g) what other evidence tends to support the probable validity of the generalization?

16. Be able to acquit himself creditably in an adversary proceeding.

17. Be able to answer correctly the following questions with respect to a given example of <u>opinion evidence</u>:

    a) is the authority an expert in this field? does he have to be, to be credible?
    b) is the authority prejudiced?
    c) is the reference to the authority specific? (i.e., is the reference a citation or a paraphrase?)
    d) is the authority aware of the significance of his opinion?
    e) is the authority supported by factual evidence?
    f) is the citation taken out of context? how different might it be in context?

18. Given a field with which he is unfamiliar at the outset, in a given period of time (e.g., 1 week) demonstrate a satisfactory level of familiarity with its general character, what is known in it, what its methods are, and what relevance it has to some professional or social concern of the student (e.g., a given tax, the law on some subject, laser technology).

19. Be able to partition a given complex problem in at least two good ways, and demonstrate how the solutions reached differ and resemble each other.

20. Be able to "A-R-Q"

Analyze a scenario by translating it into a statement that can be expressed and examined quantitatively;

Resolve the analysis in terms of a policy or other decision;

Qualify the decision in terms of possibly different results that could result from:

a) a restatement of the model used to formualte the problem, or
b) different estimation techniques, or
c) imagination in considering previously unanticipated outcomes deriving from the decision

This should all be done in a fixed period of time.

VI. Personal and Group Approaches

1. Be able to state the effect of specified body processes upon mental control.

2. Be able to state the effects of various nutritional habits on body processes.

3. Be able to describe various methods for reducing anxiety and mental anguish.

4. Be able to state several alternative methods for:

clearing the mind
focusing attention
extending attention span
increasing concentration

5. Be able to state personally effective techniques for increasing or reducing perceptual awareness.

6. Be able to employ techniques of association and grouping for remembering quantities of factual information. Hence, be able to remember more such material than non-program students.

7. Be able to document at least two different experiences as a participant in a computer-based simulation exercise; describe the learning, if any, that occurred in each instance.

8. Identify a major area of belief or value that has been substantially influenced by the curriculum, and indicate precisely what the change has been. This can mean a change or a reinforcement, but the effect must be documented and explained.

9. Be able to describe himself in terms of several differing psychological viewpoints.

10. Document at least two important instances in which he shared with others some information about himself and a problem he was having. Describe each event, indicate the feelings and emotions that accompanied it, and describe the learning or other result.

11. Similarly describe at lesat two occasions on which other shared similar information with him, etc. ...

12. Become increasingly tolerant of and comfortable with courses that are not highly structured, and material that is not highly organized a priori, as measured by attitude survey and course evaluation forms.

13. Be able to contribute at least one suggestion, that is considered important, to the evolution of this program.

14. Concerning thinking, memory, attention, cognition, be conversant with the psychological literature in these fields to a reasonable degree, and be able to describe some late theories of how these processes work, citing some of the evidence.

15. Be able to describe some of the processes he uses to improve these functions in himself.

16. Be able to describe his own limitations in these functions and what he is doing about them.

17. Document participation in a formal role-playing exercise.

18. Document at least one object, system, program, or process design for which he was principally responsible. Describe the motivation and the rationale, as well as the result.

19. Understand that individuals identify with multiple groups, communities, interests, etc., so that they experience actual or potential incompatibilities among actions/decisions.

20. Be able to state the influence of multi-level purposes (and other sources of intrapersonal conflicts) on decision behavior.

21. Be able to state the effects of perceptual distortion and selectivity, bias, goal gradient, projection, and other sources of personalization of perception on judgment or decision-making. Be able to describe means for protecting against their ill effects.

22. Be mentioned by at least one other student as outstanding in at least one aspect of decision-making or problem-solving.

VII. Problem-Solving Approaches in Various Fields

1. Show acquaintance with a range of conceptual models applicable to his field of professional interest, and the assumptions,

capabilities, limitations, and resources available with respect to each.

2. Given the names of two professional fields, be able to describe how they are the same, and how they are different. The descriptions are to be non-trivial, and include comparison of methods and techniques used.

3. Describe how computers are used in at least three different professional fields or fields of social concern (e.g., education, health professions, transportation, retailing, law enforcement, linguistics).

4. Be able to state how it is sometimes useful to bridge the interdisciplinary and interprofessional boundaries in pursuit of the solution of a problem; be able to give examples which show that the interdisciplinary boundary involves sometimes the same problems formulated in several languages; sometimes the same language applied to different problems; to overcome one's own chauvinism in terms of learning new "languages."

5. Be able to demonstrate that solving a problem is frequently more than simply applying a rule or set of rules; that this is true of the law, business, education, public administration, etc. Give examples in at least two fields.

VIII. A Focused Problem-Solving Experience (Bringing the above together into a practical experience - in one of four forms. [Required]):

1. Describe at least one formal proposal for action or policy or program change that he originated, led, or participated prominently in. Describe the outcome, and explain it.

2. Be able to document at least one "substantial" experience working as an employee or intern in a government, business, or other organization in a problem-solving capacity.

3. Be able to produce evidence of having solved or worked productively on the solution of at least two problems of moderate complexity and difficulty in different fields of application.

4. Be able to organize and effectively direct a group of his peers in group projects.

5. Given the description of a complex, problem-rich situation:

   a) be able to select those problems that should be worked on first, and justify his choice satisfactorily,
   b) be able to identify those problems that are amenable to amelioration or solution within the state of the art,
   c) be able to formulate at least one such problem in a way that makes the course of solution clear to others,
   d) be able to identify the issues inherent in the solution or

amelioration of the problem,

e) be able to separate the more from the less important parts of the problem,
f) be able to estimate the time and resources needed,
g) make a convincing case for the benefits to be obtained via a stipulated solution/amelioration procedure,
h) be able to establish the limits of goodness of the expected result and show the expected disbenefits,
i) define the major contingencies in the situation,
j) identify the various interests involved and the positions they might take with respect to the major design alternatives,
k) identify at least one reasonable alternative formulation of the problem,
l) list the design criteria to be satisfied,
m) indicate the evaluation measures and procedures to be used.

Task 4. Develop Student-Attitude-Measuring Instruments

Task 6. Develop Instruments to Measure Student Attitudes Toward University Education

Task 11. Pilot Use of Instruments with Participating Students

These tasks were combined during the project. It became apparent that inundating students, even with their consent, with too many quesionnaires to fill out was unwise, so that to the extent possible, items relating to attitudes toward university education should be added to instruments intended to measure attitudes toward courses, instructors, and the program.

Preliminary Data on Students

Appendix 1 is the form that has been developed to gather information about students upon their entry into the program. This form was constructed based upon a) a desire to learn about students as they enter the program, and b) a desire to give students a chance to ventilate their attitudes and self-views, and to show an interest in information about them that the kinds of forms they are usually asked to fill out do not explore. It is fairly extensive, and is used as a screening device in two ways: 1) it is a slight obstacle, so that students who are not interested enough in the program to fill it out turn away promptly; 2) it provides information on which judgments may be made as to students' readiness for various parts of the curriculum, or for any part of it. No single item is used by itself as a screening item, but a judgment is made on the basis of the form as a whole. An interviewer, who meets each student before admission, having read the student's form, can use his or her time well in discussing directions to be taken. The forms are also useful in detecting change or movement between entry into the program and departure from it.

Despite the length and complexity of the preliminary data sheet, it will continue to be used in its present form for some time, since it has proved useful so far. Student reactions to it seem generally favorable. It may have a slight discriminatory effect, by discouraging students who can't easily tolerate what appears to them to be administrative red tape; however, that does not seem to be as serious a price to pay as not having the kind of information the forms provide. And we try to minimize any aversion by the language of the form itself.

Student Evaluation of Courses/Instructors/Program

The form that was developed for student evaluation of courses, instructors, and program variables is given in Appendix 2. The form is relatively self-explanatory. Note that Part II lends itself to direct analysis using computer methods. The analysis has been done for eight of the courses given last year for which data were available. The summary results are given in Appendix 3. Table 1 in that Appendix

gives the key to interpretation of the computer printout, while Table 2 is a copy of that summary printout by course. The last page of that Table, on page 113, is a sample of the computer printout of information provided by each student for each course. (A single copy of a complete printout of both course and student summary information is transmitted with this report. Its bulk makes the desirability of submitting multiple copies questionable.) On page 113, note the plot of individual response pairs differences, which shows, for each of the 35 items, the disparity between desired and actual levels of performance, and demonstrates that this student found some features of the course exceeded his desired level, while the rest split about evenly in meeting it and falling short. Normally, the detailed information on each item, and totals, would be used, both in adjusting courses, and in counseling students. Both the levels and disparities carry diagnostic information, as indicated in Table 1 of the main body of this report.

So far, no tests of significance have been applied to these data. Certain conclusions are possible nevertheless:

Generally speaking, students have high expectations of the program.

For the most part, their actual experience is not far from their desired level, although it is generally somewhat lower. There are many cases, however, where actual ratings exceeded desired levels.

From comparison of the several sections of one of the courses, it appears that students' ratings of a course may depend to a significant degree on the instructor, rather than on the course structure, objectives, or textbook, which were constant. Hence, the procedure we have been using, of recruiting carefully selected faculty participants, is preferable to asking departments for courses, or specifying courses and having them manned by departments "as available."

Thus, evaluation to date, on this pilot basis, is encouraging, although there is room for improvement.

The Center for the Study of Evaluation at UCLA has developed a Higher Education Measurement and Evaluation Kit, which contains brief student questionnaire forms for use by colleges and universities in various connections. Many of the forms refer to variables that we are interested in. They have the advantage that they are very brief, they are readily scorable, and most importantly, they have been standardized on both a UCLA and a national sample of students. They have the disadvantage, in some cases, of referring to situations which are not quite like ours, so some of them are not usable for our purposes. During this coming year, we will experiment with the use of certain of these scales in the program.

They are based on a very important departure in viewpoint toward evaluation of higher education: that student evaluation of instructors and courses, while desirable for some purposes, may tend to put instructors and administrators on the defensive, which is not necessarily desirable. The value of their materials is that they are existential rather than judgmental, and constitute an important part of any plan of evaluation in our estimation. We intend to work with the Center to select the scales that have most applicability to this program. Tentative selections are given in Appendix 5.

Task 5. Devise forms for faculty members.

Table 6 is the form devised to elicit the response of faculty members participating in the program. Note the emphasis on diagnosis and suggestions, plus the encouragement to scrutinize the experience, and to relate one's own rating of the course with the students'. Also note the request for measurable indices.

TABLE 6

Instructor's Course Evaluation Form - Creative Problem-Solving Curriculum

Course: Instructor: Date:

Section:

1. In terms of the objectives stated at the outset of the course, how successful do you feel the course was (Circle one.)

Very Unsuccessful									Very Successful
1	2	3	4	5	6	7	8	9	10

2. On the whole, how do you think the students will rate this course?

1	2	3	4	5	6	7	8	9	10

3. What were the principal determiners of how the course went: (Number, in order of importance, as many as apply.)

( ) Your own preparation
( ) Your grasp of the material
( ) Your choice of format and procedure
( ) Your personal style and interaction
( ) Your acquaintance with the rest of the program
( ) Ambitiousness of the course
( ) Scheduling, including length of term
( ) Students' abilities
( ) Students' motivation
( ) Students' diversity
( ) Students' background in the program
( ) Counselling
( ) Availability of assistance
( ) Textbooks, media, and/or library services
( ) Other (specify) _____

_____

Please comment on the three or four most important ones

1. _____

2. _____

3. _____

4. _____

Additional comments: _____

_____

4. What would you do differently next time? _____

_____

5. What suggestions have you derived for the program as a whole?

_____

_____

6. List the measurable changes you think may have occurred in the students as a result of this course, and indicate how you suggest each change might be measured in the future.

_____

_____

_____

_____

_____

_____

7. List some measurable changes you think should be attended to by other parts of the curriculum that may not be occurring now, and indicate how you think they should be attended to. Also please indicate the measures you would use to ascertain that they have occurred.

_____

_____

_____

_____

_____

_____

Task 7. Generate an advisory group for the program.

Table 7 lists the advisory board members who have agreed to serve. They have been chosen for their range of relevant experience and the quality of their judgment, as well as their expressed interest in the program. Inasmuch as we wish to use their services in a systematic way without imposing too greatly on their time, we have devised an Advisory Board Member's Evaluation Form (Table 8). In return for their efforts, and to facilitate them, Board members will receive documentation on the program as it develops, summaries of evaluation reports, and occasional samples of student products. We plan to have annual meetings where they are brought up to date on developments and can participate in the process of evolution at first hand.

TABLE 7: PROGRAM ADVISORY GROUP*

Bickner, Robert, Public Policy Research Organization, University of California, Irvine

Churchman, C. West, Research Philosopher, Space Sciences Laboratory and Professor of Business Administration, University of California, Berkeley.

David, Henry, Executive Secretary, Division of Behavioral Sciences, National Academy of Sciences - National Research Council.

Michael, Donald N., Professor of Psychology, Professor of Planning and Public Policy, and Program Director, Center for Research on Utilization of Scientific Knowledge of the Institute for Social Research, University of Michigan; Visiting Fellow, Institute of International Studies, University of California, Berkeley

Mood, Alexander, Director, Public Policy Research Organization, University of California, Irvine

Pace, C. Robert, Professor of Education, University of California, Los Angeles

Park, Rosemary, Professor of Education, University of California, Los Angeles

Ratoosh, Phil, Professor of Psychology, San Francisco State University; faculty member, Wright Institute, Berkeley

Schon, Donald A., President, Organization for Social and Technological Innovation, Professor, Massachusetts Institute of Technology

Tribus, Myron, Vice President, Xerox Corporation

Note: These people have kindly agreed to serve the program in an advisory capacity. Their agreement does not imply that they have seen or approved this report, nor that they have participated in the program to this date.

These advisors are in addition to the following Deans at UCLA: the seven graduate professional school deans: Lester Breslow, Public Health, Maurice Connery, Social Welfare; John Goodlad, Education; Harvey Perloff, Architecture and Urban Planning; Charles Speroni, Fine Arts; Chauncey Starr, Engineering and Applied Science; Kenneth Trueblood, Letters and Science; Harold Williams, Graduate School of Management

TABLE 8

Advisory Board Member's Program Evaluation Form - Creative Problem-Solving Program

Advisor's name: Date:

Affiliation:

1. Please review the curriculum objectives and suggest changes you may feel to be necessary or desirable. Please explain.

_____

_____

_____

_____

_____

2. Please review the course descriptions and comment upon how well, and how thoroughly, they appear to meet the objectives. Suggest any addition, deletions, or modifications you would like to see.

_____

_____

_____

_____

_____

3. Please review the evaluation results of the program so far. What conclusions do they suggest as to a) the effectiveness of the program; and b) desirable changes.

_____

_____

_____

_____

_____

4. What additional information would you like to have about the program to facilitate the formulation of your own advice?

5. Whom would you suggest we add to our advisory panel for the program? Why?

6. To whom should we send information about the program? What kinds of information should be sent in each case, and what is the prospective recipient's reason for interest?

7. What programs at other institutions might have experiences that would be useful for us to know about?

8. Additional comments. Please feel free to comment at any length about any aspects of the program.

Task 9. Develop a factor-analytic procedure based on Q-Technique.

In this context, factor analysis may be useful in providing some underlying conceptual order to the profusion of interrelationships among the many variables involved. Another way to look at it is that it can simplify the domain, which at first sight appears extremely complex. There are, of course, a number of kinds of analysis that might be performed. Q-Technique deals with the intercorrelations among persons, so that the structure that emerges describes the population of persons rather than variables.

Several computer program packages exist on this campus to perform factor analysis. The two in most common use are the BioMedical Division (BMD) program system, and the Statistical Package for the Social Sciences (SPSS). Appendix 6 is a report on these two systems, and comes out in favor of BMD. The interested reader is referred to the two program system manuals for further information:

"Statistical Package for the Social Sciences," by Norman H. Nie, Dale H. Bent, and C. Hadlai Hull. New York, McGraw-Hill, 1970. pp. 208-244.

"BMD Biomedical Computer Programs, X-series Supplement," W. J. Dixon, Editor. Berkeley, University of California Press, 1970. pp. 90-103.

Given the report, we have elected to use the BMD X72 program. We expect to try several ways of filling the major diagonal, and several methods of rotation to see if the structures that emerge are substantially different, and if so, whether they lead to different insights.

It will be particularly interesting to trace the factor stucture as a function of time as the curriculum matures.

Task 10. Develop a statistical design.

The descriptive statistics to be used have been described previously. The complexity of the information system and the measures of performance now make the design of the inferential procedures more complicated than had been thought. Analysis of variance and covariance will be part of the scheme, but more work needs to be done before a set of tests can be determined.

CONCLUSIONS

The following conclusions have arisen from this study:

1. Evaluation procedures are part of the essential genetic material of a program of curriculum development. They also serve as a vital topic of dialogue among participants.

2. Course descriptions must be couched, at least partly, in terms of intended effects upon students, and how the effects are to be measured. This information will be used to modify Tables 1 and 5 as it emerges.

3. An analysis must now be made of costs of this plan, and sources of support found for implementing it.

4. It is possible to recruit program students into the process of curriculum evolution; although not all of them show equal involvement, some of them become deeply involved.

5. It is very difficult to generate satisfactory performance & behavioral objectives for the kind of program being developed here. Yet a start has to be made. Any list of such objectives must be viewed as subject to revision as experience, advice, and interaction accrue.

6. There are important kinds of desired outcomes that cannot necessarily be articulated in readily measurable form, and those that are measurable may come to receive inordinate amounts of attention if care is not used.

7. At least some faculty members are willing and able to think in behavioral terms for their courses and the program as a whole, although they tend to express reservations such as those in 5 and 6 above.

8. Generally speaking, students have high expectations of the program.

9. For the most part, students' ratings of their actual experience are not far from their desired ratings. Although generally somewhat lower than "desired," "actual" ratings were higher in many cases.

10. From the several sections of one of the courses, where objectives, structure, and textbooks were the same, it appears that students' ratings of a course may depend to a significant extent on the instructor. Hence, the procedure we have been using, of recruiting carefully selected faculty members, is preferable to asking departments for courses, or specifying courses and having them manned "as available."

APPENDIX I

UNDERGRADUATE STUDIES IN COMPLEX PROBLEM SOLVING

PRELIMINARY DATA SHEET

To enable us to understand the educational plans of applicants to this program, and to provide counseling in as useful a manner as possible, we need some preliminary information. This will also help in the conduct of the personal interview. In turn, the questions may give you some insight into our approaches.

Although you will find requests for grade average and other numerical figures, we place emphasis on the qualitative factors and attitudes of people, which cannot be accurately measured through objective tests alone. Consequently, your candid and considered responses to the data sheet are important and will be appreciated.

You may take the form home to complete when you can. Admittance to a course is by consent of the instructor after this form and a personal interview have been completed. The course is part of a program in complex problem solving and we are looking particularly at what our students have to say. So please feel free to be as imaginative and free-wheeling as you wish.

THE RAW FACTS ARE:

My name is:

The date I completed this form is:

for quarter, 197_.

My permanent address is: _____

_____

My mailing address is: _____

_____

You may telephone me at: _____ _____
(area code) phone

My age is:

Currently I am: single_____ divorced_____

married____ widowed_____

I work_____hours/week after school because:

EDUCATIONAL SITUATION

I am classified as: _____ _____ _____ _____
Fresh. Soph. Jr. Sr.

My major is:

I would like my major to be:

Comments:

I have previously attended _____ college or University

List if more than one:

I completed _____ high school in _____
name city and year graduated

I took the SAT and scored _____ & _____
math verbal

I would like the opportunity to take it over: _____ and/or _____
yes no

because:

Thus far, I have an overall GPA of _____

and a _____GPA in my major.

I would like to comment on my GPA, as follows:

I have received honors or exceptional recognition for my past work, such as

I have been involved in the following extra curricular service activities:

I have gained positive or negative recognition in my past schooling which I would like you to know about:

Critically evaluate your previous education.

My main motivation in joining the Problem Solving Program is:

I am interested in taking the following courses in the "momentum program" because:

I am considering attending the following professional school(s) because:

I think this program, in studying the dimensions of complex problems, may be worth pursuing because:

APPLICANT SELF EVALUATION FORM

(Please add any additional materials or papers you feel you want to use) What qualities of personality and intellect do you like and dislike about yourself? What qualities do you most admire in others?

If you were to select application materials about yourself to submit for a position you wanted, what would you choose? and which would you want the selection committee to weigh most heavily? which would you want discounted and why?

What experiences have had the most significant impact on your growth and how have they affected it?

If the above answers do not fully express what you would like to say about yourself, please use the space below to formulate what you feel to be more relevant or complete, in any way you wish.

How might we improve this form and/or the admittance procedure?

How would you go about evaluating an applicant to a position or program?

APPENDIX 2

Dear

Enclosed you will find an evaluation form designed to inform us about your ideas and attitudes regarding your course experiences in the momentum phase of the Creative Problem Solving Program. As we discussed in person, your cooperation in this evaluation process is essential, and was agreed to when you were admitted to the course. Please remember that this is not yet a fully actualized program. The courses represent first year offerings, intended as a start-up set of experiences, rather than a finished program. To allow the University to benefit most from having done this and to help us design the program for the future we need careful and conscientious feed-back from you.

The evaluation form is in three parts. Please complete the form as it is arranged, starting with Part I, going on to Part II, and ending with Part III. Do not let the reverse numbers of the questions in Part II disturb you. The numbering will expedite our scoring procedure with a computer program.

You should be able to complete the form in about two hours. Before starting, you might like to look at Part I only, and consider the questions carefully for a couple of days before sitting down to write the entire form. Once you begin to write your responses, please finish the entire evaluation in order, at one sitting.

Your answers will be kept confidential to whatever degree you request. Kindly indicate, on the first page, your feelings regarding this issue. In any case, grades will be turned in before we examine these responses.

Everyone must return the forms on or before Monday, March 29, 1972 in any of the following ways: In person, by regular post, or through the campus mail (free). Send completed forms to:

Nancy Arnold Towers
Architecture and Urban Planning - 1118
UCLA, Los Angeles, CA 90024

In the near future, we will hold a meeting for the students and faculty who have been in the program. Your invitation to the meeting and information on time, date, and place will be handled either through a cooperative network of phone calls or postcards,and information will be posted on my door.

Thank you for your interest, intelligence, and help inall these matters. It is proving very rewarding to work with you, and we look forward to further collaboration. If you have any questions or comments, please contact me at x54994, or leave a message at x53791.

Good luck!

Nancy Arnold Towers

CREATIVE PROBLEM SOLVING CURRICULUM
STUDENT EVALUATION FORMS

NAME: _____ COURSE(S) TAKEN: _____
1971

ADDRESS: _____ PROFESSOR(S): _____

_____ _____

_____
ZIP

TELEPHONE: _____ AGE: ____ MAJOR: _____ YEAR: FR, SOPH, JR, SR.
(CIRCLE)

* If additional space is required, for any part of the questionnaire, please use back of page.

PART I

The rationale for the questions in Part I is as follows: Evaluators, as well as instructors, hold particular perspectives of the skills required for graduate training. Moreover, each has his own model for problem solving effectiveness. So, while we may be able to evaluate students against skill criteria which fit our models, we cannot describe the meanings students attribute to their learning activities. We want to try and remedy this by monitoring the growth processes or changes you feel you have undergone as a result of your participation in this program. It should not only be a collection of stresses. Nor ought it to be a passive acceptance of all that occurred. We hope you will discuss the way the classes proceded, pointing out the areas of differences (or problems) and areas of strengths -- as you experienced them. With this introduction in mind, please answer the following:

1) What are your bases for judging the course? i.e. in highly personal terms, list the specific criteria (as many as you wish) that you would use in judging the meaning this course seems to hold for your life.

2) Evaluate this course on the personal criteria you listed.
   a) In what way was the course most successful?
   b) In what way was the course least successful?

PART II

The preceding section involved a highly personal "think-piece", designed to organize your feelings and ideas in writing and create a mind-set for your replies. Now we have a chance to see whether and if so how, your perspective converts to ours.

Part II requires your thoughtful responses by circling or numbering the appropriate answers. Please read the directions carefully before proceeding.

Also, please omit those questions that are preceded by a check mark (X).

Thank you.

INSTRUCTOR/COURSE EVALUATION FORM

The attached list of questions is the imperfect result of concentrated effort on the part of a group working on Course Evaluations. Many suggestions have been incorporated into this version of the evaluation form. We will continue to solicit ideas and comments from students and faculty alike. The blank page at the end of this form is to enable and encourage your comments.

The information you provide serves several purposes: (1) instructor feedback for improving teaching effectiveness, (2) assessing the role of a course in our curriculum, (3) as an aid in counselling students about courses.

The questions are clustered around the following dimensions: (1) organization, evaluation, feedback, (2) interpersonal orientation of instructor, (3) methods of presenting material, leading discussions, seminars, (4) development of critical thinking skills, and (5) course benefits.

Background Information

Course number (3 digits only): _____
e.g. "105" not "CED 105"

Section: _____
1 2 3 4

Quarter and year: (F=1, W=2, S=3; 71=1, 72=2)e.g. 1/1 _____

Course Title: _____

Instructor(s): _____

Grade expected in course: _____
A=4, B=3, C=2, Inc.=1

Degree objective: _____
Ph.D.=3, MA=2, BA/BS=1

Year at U.C.L.A. _____
Fr=1, Soph=2, Jr=3, Sr=4 Other=0

Total number of quarters completed at UCLA (including this quarter): _____

Major: _____
write in please

Previous Majors: _____

Do you feel that you were adequately prepared in concepts and skills to enter this course? _____

Would you recommend prerequisites for this course in the future? _____

If so, what kinds of courses? _____

Directions. For each item, Please do the following. First, considering the subject of this course, rank in importance the desirability of the item (first column of numbers). A "5" means very desirable (or very important) and a "1" means not desirable (or not important). Next, rank the degree to which each item was actually realized in the course (last column of numbers). Ideally, your ratings on the actual scale should not be influenced by your ratings on the desirable scale.

To what extend did your instructor:			
1. Present a well organized course with lecture, discussion, (studio) and reading related to one another?	1.	5 4 3 2 1 0	5 4 3 2 1 0
2. Involve students in setting or revising course objectives?	2.	5 4 3 2 1 0	5 4 3 2 1 0
3. Indicate where useful additional information could be found?	3.	5 4 3 2 1 0	5 4 3 2 1 0
4. Comment individually on papers and examinations, orally or in writing?	4.	5 4 3 2 1 0	5 4 3 2 1 0
5. Integrate his own research interests into the course?	5.	5 4 3 2 1 0	5 4 3 2 1 0
6. Inquire as to whether or not he was being understood by the class?	6.	5 4 3 2 1 0	5 4 3 2 1 0
7. Seem to keep in touch with the progress of the class?	7.	5 4 3 2 1 0	5 4 3 2 1 0
8. Maintain continuity from one presentation to the next?	8	5 4 3 2 1 0	5 4 3 2 1 0
9. Make himself accessible to students outside of class?	9	5 4 3 2 1 0	5 4 3 2 1 0
10. Invite criticism of his own ideas?	10	5 4 3 2 1 0	5 4 3 2 1 0
11. Show interest andconcern for the quality of his teaching	11	5 4 3 2 1 0	5 4 3 2 1 0
12. Make students feel at ease in discussions?	12	5 4 3 2 1 0	5 4 3 2 1 0
13. Demonstrate a genuine interest in students via questions and comments?	13	5 4 3 2 1 0	5 4 3 2 1 0
14. Express enthusiasm in his subject?	14	5 4 3 2 1 0	5 4 3 2 1 0
15. Encourage students to share their knowledge and experience?	15	5 4 3 2 1 0	5 4 3 2 1 0
16. Ask meaningful questions which helped you to think?	16	5 4 3 2 1 0	5 4 3 2 1 0

Looking over the items on this page, which one would you say distinguished your instructor or course the most?

Strong Points	Item #	Weak Points	Item #
Best	_____	Worst	_____
Second Best	_____	Second Worst	_____
Third Best	_____	Third Worst	_____

Directions..For each item, please do the following. First, considering the subject of this course, rank in importance the desirability of the item (first column of numbers). A "5" means very desirable (or very important) and a "1" means not desirable (or not important). Next rank the degree to which each item was actually realized in the course (last column of numbers). Ideally, your ratings on the actual scale should not be influenced by your ratings on the desirable scale.

Concerning presentations and discussions, to what extent did your instructor:			
17. Make the basic principles of the subject clear?	17	5 4 3 2 1 0	5 4 3 2 1 0
18. Discuss the practical significance and social implications of the subject?	18	5 4 3 2 1 0	5 4 3 2 1 0
19. Illustrate ideas with examples?	19	5 4 3 2 1 0	5 4 3 2 1 0
20. Discuss recent developments in the field	20	5 4 3 2 1 0	5 4 3 2 1 0
21. Stimulate your imagination?	21	5 4 3 2 1 0	5 4 3 2 1 0
22. Discuss objectively points of view other than his own?	22	5 4 3 2 1 0	5 4 3 2 1 0
23. Have an engaging style of presentation?	23	5 4 3 2 1 0	5 4 3 2 1 0
24. Identify what he considered important?	24	5 4 3 2 1 0	5 4 3 2 1 0
25. Isolate the assumptions behind a comment?	25	5 4 3 2 1 0	5 4 3 2 1 0
26. Contribute insights without delivering lengthy monologues?	26	5 4 3 2 1 0	5 4 3 2 1 0
27. Listen carefully and take sincere comments seriously?	27	5 4 3 2 1 0	5 4 3 2 1 0
28. Restate a student's comment in different ways to facilitate understanding?	28	5 4 3 2 1 0	5 4 3 2 1 0
29. Point out the generalization implied by a comment?	29	5 4 3 2 1 0	5 4 3 2 1 0
30. Ask the student for evidence to support his own generalization?	30	5 4 3 2 1 0	5 4 3 2 1 0
31. Guide discussion toward analytical and fruitful areas of inquiry?	31	5 4 3 2 1 0	5 4 3 2 1 0
33. Effectively limit students with tendencies to monopolize discussion?	33	5 4 3 2 1 0	5 4 3 2 1 0

Looking over the items on this page, which ones would you say distinguished your instructor or course the most?

Strong Points	Item #	Weak Points	Item#
Best	____	Worst	____
Second Best	____	Second Worst	____
Third Best	____	Third Worst	____

Directions. For each item, please do the following. First, considering the subject of this course, rank in importance the desirability of the item (first column of numbers). A "5" means very desirable (or very important) and a "1" means not desirable (or not important). Next, rank the degree to which each item was actually realized in the course (last column of numbers). A "5" means actually realized very well and a "1" means not actually realized. Ideally, your ratings on the actual scale should not be influenced by your ratings on the desirable scale.

To what extent did this course and instructor help you:		Desirable	Actual
34. Develop the ability to recognize assumptions--stated, unstated, supported, unsupported, and irrelevant?	34	5 4 3 2 1 0	5 4 3 2 1 0
35. Develop intellectual curiosity--interest in discovering and understanding problems?	35	5 4 3 2 1 0	5 4 3 2 1 0
36. Develop the ability to define problems--breaking into elements, formulating relationships and questions which are testable?	36	5 4 3 2 1 0	5 4 3 2 1 0
37. Develop the ability to select information relevant to the problem--distinguishing reliable information and sources?	37	5 4 3 2 1 0	5 4 3 2 1 0
38. Develop open-mindedness-withholding judgement, examining contrary views, changing one's opinion in the light of factual evidence?	38	5 4 3 2 1 0	5 4 3 2 1 0
39. Develop intellectual honesty and objectivity--seeking the best possible answers, accepting the consequences of inquiry and reporting the findings accurately and without intentional distortion?	39	5 4 3 2 1 0	5 4 3 2 1 0
40. Develop the ability to draw conclusions from the facts and assumptions?	40	5 4 3 2 1 0	5 4 3 2 1 0
41. Develop the ability to recognize problems on your own?	41	5 4 3 2 1 0	5 4 3 2 1 0
42. Develop the ability to find applications for conclusions?	42	5 4 3 2 1 0	5 4 3 2 1 0

Looking over the items on this page, which ones would you say distinguished your instructor or course the most?

Strong Points	Item #	Weak Points	Item #
Best	____	Worst	____
Second Best	____	Second Worst	____
Third Best	____	Third Worst	____

Directions. For each item, please do the following. First, considering the subject of this course, rank in importance the desirability of the item (first column of numbers). A "5" means very desirable (or very important) and a "1" means not desirable (or not important). Next, rank the degree to which each item was actually realized in the course (last column of numbers). A "5" means actually realized very well and a "1" means not actually realized. Ideally your ratings on the actual scale should not be influenced by your ratings on the desirable scale.

Key:	5 = Very Much
	4 = Quite a bit
	3 = A moderate amount
	2 = Some
	1 = Little or none
	0 = Don't know or Does not apply

To what extent has this course:		Desirable	Actual
43. Been so interesting that you would recommend it to others with interests similar to your own?	43	5 4 3 2 1 0	5 4 3 2 1 0
44. Been challenging to you intellectually?	44	5 4 3 2 1 0	5 4 3 2 1 0
45. Been valuable to your personal (psychological and social) development?	45	5 4 3 2 1 0	5 4 3 2 1 0
46. Stimulated you to do extra non-required reading, or follow up the interest generated in other ways?	46	5 4 3 2 1 0	5 4 3 2 1 0
47. Been valuable to your academic plans?	47	5 4 3 2 1 0	5 4 3 2 1 0
48. Been so interesting you wanted it to last longer?	48	5 4 3 2 1 0	5 4 3 2 1 0
49. Been valuable to your professional plans?	49	5 4 3 2 1 0	5 4 3 2 1 0
50. Provided you with an opportunity to work on a project or paper which you consider meaningful?	50	5 4 3 2 1 0	5 4 3 2 1 0

Looking over the items on this page, which ones would you say distinguished your instructor or course the most?

Strong Points	Item #	Weak Points	Item #
Best	____	Worst	____
Second Best	____	Second Worst	____
Third Best	____	Third Worst	____

PART III

The following questions will require written answers. Please answer them as fully as you wish, keeping in mind that we are looking for honest, direct, and thoughtful replies. Please don't try to interpret what you think we want to hear. There are no sanctions (for or against) nor prescriptions for a "right" answer. They are asked in order to provide information on how to better organize the program; design the next stages; and build a more responsive curriculum. If additional space is required, please use additional paper.

Thank you.

1. Are you pleased you took the course(s) that you did?

2. Do you want another "follow up" course based upon the learning experiences in this course?

   What design?

   With which Professor(s) on campus?

3. Are you interested in taking more courses of the kind this program promises? Which courses and why?

4. Are you willing to give "design time" to the creation of learning experiences for the program?

5. Have your professional plans or expectations changed or been modified at all as a result of your experience in this course? If yes, how or why? If not, why not?

6. What kind of work do you intend to do upon graduation?

7. Do you see this program as benefitting you in your long range plans? If so, how? If not, why not?

8. Have you changed your mind regarding the size and complexity of problems you find challenging? If so, why? and if not, why not?

9. Communicating information about the program, on a campus-wide basis, is a continuing problem for us. Can you suggest feasible methods for changing this? Are you interested in helping in this process?

10. We want to recruit outstanding faculty on campus into the program. Please list the names of those members of the faculty (from all departments) whom you most esteem, would enjoy working with, and who might be interested in our program.

Thank you.

APPENDIX 3: TABLE 1

Key to Computer Printout of Student Course Evaluations

I. Table I; response codes, responses, and computed, desired, actual, and total frequencies and percentage frequencies:

A. code; response type code number
B. FQA; total response frequency of an "actual" response
C. % FQA; percentage total response frequency of an "actual" response
D. FDQ; total response frequency of a "desired" response
E. % FDQ; percentage total response frequency of a "desired" response
F. FQT; total response frequency of both an "actual" and a "desired" response
G. % FQT; percentage total response frequency of both an "actual" and a "desired" response
H. Response; response type syntax

II. Table II; course question statistics summary:

A. ADM DF; (actual-desired) mean difference
B. CODE; response type code number
C. FREQ; response frequency
D. % FREQ; percentage response frequency
E. MN ACT; "actual" response mean
F. MN DES; "desired" response mean
G. MSE ACT; "actual" response mean standard error
H. MSE DES; "desired" response mean standard error
I. STD ACT; "actual" response standard deviation
J. STD DES; "desired" response standard deviation
K. VAR ACT; "actual" response variance
L. VAR DES' "desired" response variance

III. Table III; student statistics summary:

A. AR; "actual response
B. ARM; "actual" response mean
C. ARMSE; "actual" response mean standard error
D. ARSTD; "actual" response standard deviation
E. ARVAR; "actual" response variance
F. CODE; response type code number
G. % DIS; percentage ("actual"-"desired") response disparity
H. DR; "desired" response
I. DRM; "desired" response mean
J. DRMSE; "desired" response mean standard error
K. DRSTD; "desired" response standard deviation
L. DRVAR; "desired" response variance
M. FREQ; response frequency
N. % FREQ; percentage response frequency
O. MR; mean response
P. MRDIF; mean ("actual"-"desired") response difference
Q. Q; question number
R. RD; ("actual"-"desired") response difference

IV. Summary:

A. QUESTIONS; question syntax
B. # QUEST; question number
C. MN ACT RESP; mean "actual" response
D. MN A-D RSP DF; mean ("actual"-"desired") response difference
E. MN DES RESP; mean "desired" response

APPENDIX 3: TABLE 2

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: LAW 105
TITLE: LAW, LAWYERS, AND SOCIAL CHANGE
SECTION: 1
QUARTER: FALL
YEAR: 1971
INSTRUCTOR(S): H
35 QUESTIONS
5 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
1	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING THAT YOU WOULD RECOMMEND IT TO OTHERS WITH INTERESTS SIMILAR TO YOUR OWN?	3.80	4.00	0.20
2	TO WHAT EXTENT HAS THIS COURSE BEEN CHALLENGING TO YOU INTELLECTUALLY?	4.60	4.20	-0.40
3	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR PERSONAL (PSYCHOLOGICAL AND SOCIAL) DEVELOPMENT?	4.00	3.80	-0.20
4	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR ACADEMIC PLANS?	3.80	3.60	-0.20
5	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING YOU WANTED IT TO LAST LONGER?	3.60	3.00	-0.60
6	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOU PROFESSIONAL PLANS?	3.40	3.20	-0.20
7	TO WHAT EXTENT HAS THIS COURSE PROVIDED YOU WITH AN OPPORTUNITY TO WORK ON A PROJECT OR PAPER WHICH YOU CONSIDER MEANINGFUL?	3.00	1.20	-1.80
8	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE ASSUMPTIONS--STATED, UNSTATED, SUPPORTED, UNSUPPORTED, AND IRRELEVANT?	4.40	3.60	-0.80
9	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL CURIOSITY--INTEREST IN DISCOVERING AND UNDERSTANDING PROBLEMS?	4.40	3.80	-0.60
10	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DEFINE PROBLEMS--BREAKING INTO ELEMENTS, FORMULATING RELATIONSHIPS AND QUESTIONS WHICH ARE TESTABLE?	3.80	2.60	-1.20
11	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO SELECT INFORMATION RELEVANT TO THE PROBLEM--DISTINGUISHING RELIABLE INFORMATION AND SOURCES?	4.00	3.20	-0.80
12	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP OPEN-MINDEDNESS--WITHHOLDING JUDGEMENT, EXAMINING CONTRARY VIEWS, CHANGING ONE'S OPINION IN THE LIGHT OF FACTUAL EVIDENCE?	3.20	3.00	-0.20

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: LAW 105
TITLE: LAW, LAWYERS, AND SOCIAL CHANGE
SECTION: 1
QUARTER: FALL
YEAR: 1971
INSTRUCTOR(S): H
35 QUESTIONS
5 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
13	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL HONESTY AND OBJECTIVITY--SEEKING THE BEST POSSIBLE ANSWERS, ACCEPTING THE CONSEQUENCES OF INQUIRY AND REPORTING THE FINDINGS ACCURATELY AND WITHOUT INTENTIONAL DISTORTION?	4.60	4.40	-0.20
14	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DRAW CONCLUSIONS FROM THE FACTS AND ASSUMPTIONS?	4.60	4.20	-0.40
15	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE PROBLEMS ON YOUR OWN?	3.40	3.20	-0.20
16	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO FIND APPLICATIONS FOR CONCLUSIONS?	4.00	3.40	-0.60
17	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE THE BASIC PRINCIPLES OF THE SUBJECT CLEAR?	3.80	3.20	-0.60
18	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS THE PRACTICAL SIGNIFICANCE AND SOCIAL IMPLICATIONS OF THE SUBJECT?	4.80	4.80	0.0
19	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ILLUSTRATE IDEAS WITH EXAMPLES?	4.40	4.40	0.0
20	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS RECENT DEVELOPMENTS IN THE FIELD?	4.20	4.20	0.0
21	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR STIMULATE YOUR IMAGINATION?	3.20	3.40	0.20
22	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS OBJECTIVELY POINTS OF VIEW OTHER THAN HIS OWN?	3.20	3.40	0.20
23	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR IDENTIFY WHAT HE CONSIDERED IMPORTANT?	4.00	4.20	0.20

COURSE/INSTRUCTOR EVALUATION

COURSE NUMBER: LAW 105
TITLE: LAW, LAWYERS, AND SOCIAL CHANGE
SECTION: 1
QUARTER: FALL
YEAR: 1971
INSTRUCTOR(S): H
35 QUESTIONS
5 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
24	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ISOLATE THE ASSUMPTIONS BEHIND A COMMENT?	4.40	4.20	-0.20
25	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR CONTRIBUTE INSIGHTS WITHOUT DELIVERING LENGTHY MONOLOGUES?	3.60	4.00	0.40
26	TO WHAT EXTENT DID YOUR INSTRUCTOR INDICATE WHERE USEFUL ADDITIONAL INFORMATION COULD BE FOUND?	3.60	3.20	-0.40
27	TO WHAT EXTENT DID YOUR INSTRUCTOR COMMENT INDIVIDUALLY ON PAPERS AND EXAMINATIONS, ORALLY OR IN WRITING?	0.60	1.60	1.00
28	TO WHAT EXTENT DID YOUR INSTRUCTOR SEEM TO KEEP IN TOUCH WITH THE PROGRESS OF THE CLASS?	3.20	3.00	-0.20
29	TO WHAT EXTENT DID YOUR INSTRUCTOR MAINTAIN CONTINUITY FROM ONE PRESENTATION TO THE NEXT?	4.80	3.60	-1.20
30	TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE HIMSELF ACCESSIBLE TO STUDENTS OUTSIDE OF CLASS?	4.60	4.80	0.20
31	TO WHAT EXTENT DID YOUR INSTRUCTOR INVITE CRITICISM OF HIS OWN IDEAS?	2.60	3.20	0.60
32	TO WHAT EXTENT DID YOUR INSTRUCTOR SHOW INTEREST AND CONCERN FOR THE QUALITY OF HIS TEACHING?	3.80	3.80	0.0
33	TO WHAT EXTENT DID YOUR INSTRUCTOR DEMONSTRATE A GENUINE INTEREST IN STUDENTS VIA QUESTIONS AND COMMENTS?	4.00	4.60	0.60
34	TO WHAT EXTENT DID YOUR INSTRUCTOR EXPRESS ENTHUSIASM IN HIS SUBJECT?	5.00	5.00	0.0
35	TO WHAT EXTENT DID YOUR INSTRUCTOR ENCOURAGE STUDENTS TO SHARE THEIR KNOWLEDGE AND EXPERIENCE?	3.20	3.60	0.40

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: LAW 105
TITLE: LAW, LAWYERS, AND SOCIAL CHANGE
SECTION: 2
QUARTER: FALL
YEAR: 1971
INSTRUCTOR(S): K
35 QUESTIONS
4 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
1	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING THAT YOU WOULD RECOMMEND IT TO OTHERS WITH INTERESTS SIMILAR TO YOUR OWN?	4.75	4.25	-0.50
2	TO WHAT EXTENT HAS THIS COURSE BEEN CHALLENGING TO YOU INTELLECTUALLY?	5.00	4.75	-0.25
3	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR PERSONAL (PSYCHOLOGICAL AND SOCIAL) DEVELOPMENT?	4.75	4.50	-0.25
4	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR ACADEMIC PLANS?	4.50	4.75	0.25
5	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING YOU WANTED IT TO LAST LONGER?	4.00	4.25	0.25
6	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOU PROFESSIONAL PLANS?	4.00	4.75	0.75
7	TO WHAT EXTENT HAS THIS COURSE PROVIDED YOU WITH AN OPPORTUNITY TO WORK ON A PROJECT OR PAPER WHICH YOU CONSIDER MEANINGFUL?	3.75	3.50	-0.25
8	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE ASSUMPTIONS--STATED, UNSTATED, SUPPORTED, UNSUPPORTED, AND IRRELEVANT?	2.50	2.25	-0.25
9	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL CURIOSITY--INTEREST IN DISCOVERING AND UNDERSTANDING PROBLEMS?	4.75	4.75	0.0
10	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DEFINE PROBLEMS--BREAKING INTO ELEMENTS, FORMULATING RELATIONSHIPS AND QUESTIONS WHICH ARE TESTABLE?	4.75	4.00	-0.75
11	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO SELECT INFORMATION RELEVANT TO THE PROBLEM--DISTINGUISHING RELIABLE INFORMATION AND SOURCES?	3.75	3.25	-0.50
12	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP OPEN-MINDEDNESS--WITHHOLDING JUDGEMENT, EXAMINING CONTRARY VIEWS, CHANGING ONE'S OPINION IN THE LIGHT OF FACTUAL EVIDENCE?	4.00	3.25	-0.75

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: LAW 105
TITLE: LAW, LAWYERS, AND SOCIAL CHANGE
SECTION: 2
QUARTER: FALL
YEAR: 1971
INSTRUCTOR(S): K
35 QUESTIONS
4 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
13	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL HONESTY AND OBJECTIVITY--SEEKING THE BEST POSSIBLE ANSWERS, ACCEPTING THE CONSEQUENCES OF INQUIRY AND REPORTING THE FINDINGS ACCURATELY AND WITHOUT INTENTIONAL DISTORTION?	3.50	3.25	-0.25
14	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DRAW CONCLUSIONS FROM THE FACTS AND ASSUMPTIONS?	3.75	3.00	-0.75
15	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE PROBLEMS ON YOUR OWN?	3.75	2.50	-1.25
16	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO FIND APPLICATIONS FOR CONCLUSIONS?	3.25	3.00	-0.25
17	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE THE BASIC PRINCIPLES OF THE SUBJECT CLEAR?	4.50	4.00	-0.50
18	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS THE PRACTICAL SIGNIFICANCE AND SOCIAL IMPLICATIONS OF THE SUBJECT?	5.00	4.50	-0.50
19	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ILLUSTRATE IDEAS WITH EXAMPLES?	4.50	4.25	-0.25
20	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS RECENT DEVELOPMENTS IN THE FIELD?	5.00	4.75	-0.25
21	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR STIMULATE YOUR IMAGINATION?	4.00	3.75	-0.25
22	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS OBJECTIVELY POINTS OF VIEW OTHER THAN HIS OWN?	3.75	3.25	-0.50
23	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR IDENTIFY WHAT HE CONSIDERED IMPORTANT?	3.75	4.50	0.75

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: LAW 105
TITLE: LAW, LAWYERS, AND SOCIAL CHANGE
SECTION: 2
QUARTER: FALL
YEAR: 1971
INSTRUCTOR(S): K
35 QUESTIONS
4 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
24	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ISOLATE THE ASSUMPTIONS BEHIND A COMMENT?	1.50	1.75	0.25
25	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR CONTRIBUTE INSIGHTS WITHOUT DELIVERING LENGTHY MONOLOGUES?	4.25	4.25	0.0
26	TO WHAT EXTENT DID YOUR INSTRUCTOR INDICATE WHERE USEFUL ADDITIONAL INFORMATION COULD BE FOUND?	3.25	2.25	-1.00
27	TO WHAT EXTENT DID YOUR INSTRUCTOR COMMENT INDIVIDUALLY ON PAPERS AND EXAMINATIONS, ORALLY OR IN WRITING?	2.50	1.50	-1.00
28	TO WHAT EXTENT DID YOUR INSTRUCTOR SEEM TO KEEP IN TOUCH WITH THE PROGRESS OF THE CLASS?	4.00	3.00	-1.00
29	TO WHAT EXTENT DID YOUR INSTRUCTOR MAINTAIN CONTINUITY FROM ONE PRESENTATION TO THE NEXT?	4.75	5.00	0.25
30	TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE HIMSELF ACCESSIBLE TO STUDENTS OUTSIDE OF CLASS?	5.00	3.25	-1.75
31	TO WHAT EXTENT DID YOUR INSTRUCTOR INVITE CRITICISM OF HIS OWN IDEAS?	3.25	3.00	-0.25
32	TO WHAT EXTENT DID YOUR INSTRUCTOR SHOW INTEREST AND CONCERN FOR THE QUALITY OF HIS TEACHING?	3.25	2.75	-0.50
33	TO WHAT EXTENT DID YOUR INSTRUCTOR DEMONSTRATE A GENUINE INTEREST IN STUDENTS VIA QUESTIONS AND COMMENTS?	4.75	4.00	-0.75
34	TO WHAT EXTENT DID YOUR INSTRUCTOR EXPRESS ENTHUSIASM IN HIS SUBJECT?	5.00	4.50	-0.50
35	TO WHAT EXTENT DID YOUR INSTRUCTOR ENCOURAGE STUDENTS TO SHARE THEIR KNOWLEDGE AND EXPERIENCE?	3.75	3.25	-0.50

COURSE/INSTRUCTOR EVALUATION

COURSE NUMBER: LAW 105
TITLE: LAW, LAWYERS, AND SOCIAL CHANGE
SECTION: 3
QUARTER: FALL
YEAR: 1971
INSTRUCTOR(S): M
35 QUESTIONS
4 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
1	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING THAT YOU WOULD RECOMMEND IT TO OTHERS WITH INTERESTS SIMILAR TO YOUR OWN?	4.75	3.50	-1.25
2	TO WHAT EXTENT HAS THIS COURSE BEEN CHALLENGING TO YOU INTELLECTUALLY?	5.00	4.25	-0.75
3	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR PERSONAL (PSYCHOLOGICAL AND SOCIAL) DEVELOPMENT?	3.75	3.25	-0.50
4	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR ACADEMIC PLANS?	4.75	3.75	-1.00
5	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING YOU WANTED IT TO LAST LONGER?	4.50	3.50	-1.00
6	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOU PROFESSIONAL PLANS?	4.25	3.75	-0.50
7	TO WHAT EXTENT HAS THIS COURSE PROVIDED YOU WITH AN OPPORTUNITY TO WORK ON A PROJECT OR PAPER WHICH YOU CONSIDER MEANINGFUL?	4.75	3.75	-1.00
8	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE ASSUMPTIONS--STATED, UNSTATED, SUPPORTED, UNSUPPORTED, AND IRRELEVANT?	4.00	4.00	0.0
9	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL CURIOSITY--INTEREST IN DISCOVERING AND UNDERSTANDING PROBLEMS?	4.25	4.00	-0.25
10	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DEFINE PROBLEMS--BREAKING INTO ELEMENTS, FORMULATING RELATIONSHIPS AND QUESTIONS WHICH ARE TESTABLE?	4.25	2.75	-1.50
11	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO SELECT INFORMATION RELEVANT TO THE PROBLEM--DISTINGUISHING RELIABLE INFORMATION AND SOURCES?	4.25	3.25	-1.00
12	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP OPEN-MINDEDNESS--WITHHOLDING JUDGEMENT, EXAMINING CONTRARY VIEWS, CHANGING ONE'S OPINION IN THE LIGHT OF FACTUAL EVIDENCE?	4.50	3.75	-0.75

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: LAW 105
TITLE: LAW, LAWYERS, AND SOCIAL CHANGE
SECTION: 3
QUARTER: FALL
YEAR: 1971
INSTRUCTOR(S): M
35 QUESTIONS
4 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
13	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL HONESTY AND OBJECTIVITY--SEEKING THE BEST POSSIBLE ANSWERS, ACCEPTING THE CONSEQUENCES OF INQUIRY AND REPORTING THE FINDINGS ACCURATELY AND WITHOUT INTENTIONAL DISTORTION?	4.00	3.25	-0.75
14	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DRAW CONCLUSIONS FROM THE FACTS AND ASSUMPTIONS?	4.50	4.25	-0.25
15	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE PROBLEMS ON YOUR OWN?	5.00	3.75	-1.25
16	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO FIND APPLICATIONS FOR CONCLUSIONS?	4.50	2.75	-1.75
17	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE THE BASIC PRINCIPLES OF THE SUBJECT CLEAR?	4.75	4.25	-0.50
18	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS THE PRACTICAL SIGNIFICANCE AND SOCIAL IMPLICATIONS OF THE SUBJECT?	4.50	4.75	0.25
19	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ILLUSTRATE IDEAS WITH EXAMPLES?	4.50	4.75	0.25
20	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS RECENT DEVELOPMENTS IN THE FIELD?	5.00	5.00	0.0
21	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR STIMULATE YOUR IMAGINATION?	4.50	4.00	-0.50
22	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS OBJECTIVELY POINTS OF VIEW OTHER THAN HIS OWN?	4.50	3.50	-1.00
23	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR IDENTIFY WHAT HE CONSIDERED IMPORTANT?	4.00	4.75	0.75

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: LAW 135
TITLE: LAW, LAWYERS, AND SOCIAL CHANGE
SECTION: 3
QUARTER: FALL
YEAR: 1971
INSTRUCTOR(S): M
35 QUESTIONS
4 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
24	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ISOLATE THE ASSUMPTIONS BEHIND A COMMENT?	3.00	3.25	0.25
25	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR CONTRIBUTE INSIGHTS WITHOUT DELIVERING LENGTHY MONOLOGUES?	2.00	3.00	1.00
26	TO WHAT EXTENT DID YOUR INSTRUCTOR INDICATE WHERE USEFUL ADDITIONAL INFORMATION COULD BE FOUND?	3.50	3.00	-0.50
27	TO WHAT EXTENT DID YOUR INSTRUCTOR COMMENT INDIVIDUALLY ON PAPERS AND EXAMINATIONS, ORALLY OR IN WRITING?	3.00	1.75	-1.25
28	TO WHAT EXTENT DID YOUR INSTRUCTOR SEEM TO KEEP IN TOUCH WITH THE PROGRESS OF THE CLASS?	4.25	3.00	-1.25
29	TO WHAT EXTENT DID YOUR INSTRUCTOR MAINTAIN CONTINUITY FROM ONE PRESENTATION TO THE NEXT?	4.00	4.50	0.50
30	TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE HIMSELF ACCESSIBLE TO STUDENTS OUTSIDE OF CLASS?	5.00	4.00	-1.00
31	TO WHAT EXTENT DID YOUR INSTRUCTOR INVITE CRITICISM OF HIS OWN IDEAS?	4.50	4.25	-0.25
32	TO WHAT EXTENT DID YOUR INSTRUCTOR SHOW INTEREST AND CONCERN FOR THE QUALITY OF HIS TEACHING?	5.00	4.25	-0.75
33	TO WHAT EXTENT DID YOUR INSTRUCTOR DEMONSTRATE A GENUINE INTEREST IN STUDENTS VIA QUESTIONS AND COMMENTS?	4.50	4.25	-0.25
34	TO WHAT EXTENT DID YOUR INSTRUCTOR EXPRESS ENTHUSIASM FOR HIS SUBJECT?	4.75	5.00	0.25
35	TO WHAT EXTENT DID YOUR INSTRUCTOR ENCOURAGE STUDENTS TO SHARE THEIR KNOWLEDGE AND EXPERIENCE?	3.50	3.5	0.0

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: LAW 105
TITLE: LAW, LAWYERS, AND SOCIAL CHANGE
SECTION: 4
QUARTER: FALL
YEAR: 1971
INSTRUCTOR(S): W
35 QUESTIONS
11 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
1	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING THAT YOU WOULD RECOMMEND IT TO OTHERS WITH INTERESTS SIMILAR TO YOUR OWN?	3.73	3.55	-0.18
2	TO WHAT EXTENT HAS THIS COURSE BEEN CHALLENGING TO YOU INTELLECTUALLY?	4.87	3.55	-1.27
3	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR PERSONAL (PSYCHOLOGICAL AND SOCIAL) DEVELOPMENT?	3.82	2.36	-1.45
4	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR ACADEMIC PLANS?	3.64	2.55	-1.09
5	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING YOU WANTED IT TO LAST LONGER?	3.91	3.18	-0.73
6	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOU PROFESSIONAL PLANS?	3.55	2.91	-0.64
7	TO WHAT EXTENT HAS THIS COURSE PROVIDED YOU WITH AN OPPORTUNITY TO WORK ON A PROJECT OR PAPER WHICH YOU CONSIDER MEANINGFUL?	4.27	3.27	-1.00
8	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE ASSUMPTIONS--STATED, UNSTATED, SUPPORTED, UNSUPPORTED, AND IRRELEVANT?	4.09	3.18	-0.91
9	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL CURIOSITY--INTEREST IN DISCOVERING AND UNDERSTANDING PROBLEMS?	4.73	3.27	-1.45
10	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DEFINE PROBLEMS--BREAKING INTO ELEMENTS, FORMULATING RELATIONSHIPS AND QUESTIONS WHICH ARE TESTABLE?	4.09	2.91	-1.18
11	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO SELECT INFORMATION RELEVANT TO THE PROBLEM--DISTINGUISHING RELIABLE INFORMATION AND SOURCES?	4.36	3.27	-1.09
12	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP OPEN-MINDEDNESS--WITHHOLDING JUDGMENT, EXAMINING CONTRARY VIEWS, CHANGING ONE'S OPINION IN THE LIGHT OF FACTUAL EVIDENCE?	4.45	4.00	-0.45

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: LAW 105
TITLE: LAW, LAWYERS, AND SOCIAL CHANGE
SECTION: 4
QUARTER: FALL
YEAR: 1971
INSTRUCTOR(S): W
35 QUESTIONS
11 RESPONDING STUDENTS

RESPONSE KEYS:
0; DON'T KNOW OR DOES NOT APPLY
1; LITTLE OR NONE
2; SOME
3; A MODERATE AMOUNT
4; QUITE A BIT
5; VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
13	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL HONESTY AND OBJECTIVITY--SEEKING THE BEST POSSIBLE ANSWERS, ACCEPTING THE CONSEQUENCES OF INQUIRY AND REPORTING THE FINDINGS ACCURATELY AND WITHOUT INTENTIONAL DISTORTION?	4.36	3.36	-1.00
14	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DRAW CONCLUSIONS FROM THE FACTS AND ASSUMPTIONS?	4.55	2.82	-1.73
15	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE PROBLEMS ON YOUR OWN?	4.73	3.09	-1.64
16	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO FIND APPLICATIONS FOR CONCLUSIONS?	3.91	2.18	-1.73
17	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE THE BASIC PRINCIPLES OF THE SUBJECT CLEAR?	4.64	4.00	-0.64
18	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS THE PRACTICAL SIGNIFICANCE AND SOCIAL IMPLICATIONS OF THE SUBJECT?	4.45	4.18	-0.27
19	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ILLUSTRATE IDEAS WITH EXAMPLES?	4.27	4.09	-0.18
20	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS RECENT DEVELOPMENTS IN THE FIELD?	4.18	3.27	-0.91
21	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR STIMULATE YOUR IMAGINATION?	4.27	3.36	-0.91
22	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS OBJECTIVELY POINTS OF VIEW OTHER THAN HIS OWN?	4.27	3.73	-0.55
23	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR IDENTIFY WHAT HE CONSIDERED IMPORTANT?	3.82	3.64	-0.18

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: LAW 105
TITLE: LAW, LAWYERS, AND SOCIAL CHANGE
SECTION: 4
QUARTER: FALL
YEAR: 1971
INSTRUCTOR(S): M
35 QUESTIONS
11 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
24	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ISOLATE THE ASSUMPTIONS BEHIND A COMMENT?	4.45	3.73	-0.73
25	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR CONTRIBUTE INSIGHTS WITHOUT DELIVERING LENGTHY MONOLOGUES?	3.91	3.27	-0.64
26	TO WHAT EXTENT DID YOUR INSTRUCTOR INDICATE WHERE USEFUL ADDITIONAL INFORMATION COULD BE FOUND?	4.00	3.00	-1.00
27	TO WHAT EXTENT DID YOUR INSTRUCTOR COMMENT INDIVIDUALLY ON PAPERS AND EXAMINATIONS, ORALLY OR IN WRITING?	4.00	3.18	-0.82
28	TO WHAT EXTENT DID YOUR INSTRUCTOR SEEM TO KEEP IN TOUCH WITH THE PROGRESS OF THE CLASS?	4.55	3.73	-0.82
29	TO WHAT EXTENT DID YOUR INSTRUCTOR MAINTAIN CONTINUITY FROM ONE PRESENTATION TO THE NEXT?	4.27	4.00	-0.27
30	TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE HIMSELF ACCESSIBLE TO STUDENTS OUTSIDE OF CLASS?	4.55	4.27	-0.27
31	TO WHAT EXTENT DID YOUR INSTRUCTOR INVITE CRITICISM OF HIS OWN IDEAS?	4.27	4.27	0.0
32	TO WHAT EXTENT DID YOUR INSTRUCTOR SHOW INTEREST AND CONCERN FOR THE QUALITY OF HIS TEACHING?	4.64	4.82	0.18
33	TO WHAT EXTENT DID YOUR INSTRUCTOR DEMONSTRATE A GENUINE INTEREST IN STUDENTS VIA QUESTIONS AND COMMENTS?	4.73	4.18	-0.55
34	TO WHAT EXTENT DID YOUR INSTRUCTOR EXPRESS ENTHUSIASM IN HIS SUBJECT?	4.82	3.55	-1.27
35	TO WHAT EXTENT DID YOUR INSTRUCTOR ENCOURAGE STUDENTS TO SHARE THEIR KNOWLEDGE AND EXPERIENCE?	4.09	3.64	-0.45

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: ENGN 11
TITLE: ENGINEERING 11
SECTION: 1
QUARTER: FALL
YEAR: 1972
INSTRUCTOR(S): R
35 QUESTIONS
4 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
1	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING THAT YOU WOULD RECOMMEND IT TO OTHERS WITH INTERESTS SIMILAR TO YOUR OWN?	4.75	3.75	-1.00
2	TO WHAT EXTENT HAS THIS COURSE BEEN CHALLENGING TO YOU INTELLECTUALLY?	4.00	4.00	0.0
3	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR PERSONAL (PSYCHOLOGICAL AND SOCIAL) DEVELOPMENT?	4.25	3.50	-0.75
4	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR ACADEMIC PLANS?	4.00	3.75	-0.25
5	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING YOU WANTED IT TO LAST LONGER?	2.25	2.25	0.0
6	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOU PROFESSIONAL PLANS?	3.00	2.50	-0.50
7	TO WHAT EXTENT HAS THIS COURSE PROVIDED YOU WITH AN OPPORTUNITY TO WORK ON A PROJECT OR PAPER WHICH YOU CONSIDER MEANINGFUL?	2.00	2.25	0.25
8	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE ASSUMPTIONS--STATED, UNSTATED, SUPPORTED, UNSUPPORTED, AND IRRELEVANT?	4.25	4.25	0.0
9	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL CURIOSITY--INTEREST IN DISCOVERING AND UNDERSTANDING PROBLEMS?	5.00	4.00	-1.00
10	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DEFINE PROBLEMS--BREAKING INTO ELEMENTS, FORMULATING RELATIONSHIPS AND QUESTIONS WHICH ARE TESTABLE?	4.50	3.25	-1.25
11	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO SELECT INFORMATION RELEVANT TO THE PROBLEM--DISTINGUISHING RELIABLE INFORMATION AND SOURCES?	3.50	4.25	0.75
12	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP OPEN-MINDEDNESS--WITHHOLDING JUDGEMENT, EXAMINING CONTRARY VIEWS, CHANGING ONE'S OPINION IN THE LIGHT OF FACTUAL EVIDENCE?	4.50	4.50	0.0

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: ENGN 11
TITLE: ENGINEERING 11
SECTION: 1
QUARTER: FALL
YEAR: 1972
INSTRUCTOR(S): R
35 QUESTIONS
4 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
13	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL HONESTY AND OBJECTIVITY--SEEKING THE BEST POSSIBLE ANSWERS, ACCEPTING THE CONSEQUENCES OF INQUIRY AND REPORTING THE FINDINGS ACCURATELY AND WITHOUT INTENTIONAL DISTORTION?	2.50	3.50	1.00
14	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DRAW CONCLUSIONS FROM THE FACTS AND ASSUMPTIONS?	4.50	4.50	0.0
15	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE PROBLEMS ON YOUR OWN?	3.00	3.25	0.25
16	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO FIND APPLICATIONS FOR CONCLUSIONS?	3.25	2.50	-0.75
17	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE THE BASIC PRINCIPLES OF THE SUBJECT CLEAR?	4.75	4.50	-0.25
18	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS THE PRACTICAL SIGNIFICANCE AND SOCIAL IMPLICATIONS OF THE SUBJECT?	5.00	3.75	-1.25
19	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ILLUSTRATE IDEAS WITH EXAMPLES?	4.50	4.50	0.0
20	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS RECENT DEVELOPMENTS IN THE FIELD?	3.50	3.00	-0.50
21	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR STIMULATE YOUR IMAGINATION?	4.50	4.25	-0.25
22	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS OBJECTIVELY POINTS OF VIEW OTHER THAN HIS OWN?	3.00	3.00	0.0
23	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR IDENTIFY WHAT HE CONSIDERED IMPORTANT?	4.50	4.00	-0.50

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: ENGN 11
TITLE: ENGINEERING 11
SECTION: 1
QUARTER: FALL
YEAR: 1972
INSTRUCTOR(S): R
35 QUESTIONS
4 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUES	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
24	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ISOLATE THE ASSUMPTIONS BEHIND A COMMENT?	4.00	2.75	-1.25
25	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR CONTRIBUTE INSIGHTS WITHOUT DELIVERING LENGTHY MONOLOGUES?	4.00	4.00	0.0
26	TO WHAT EXTENT DID YOUR INSTRUCTOR INDICATE WHERE USEFUL ADDITIONAL INFORMATION COULD BE FOUND?	4.50	3.25	-1.25
27	TO WHAT EXTENT DID YOUR INSTRUCTOR COMMENT INDIVIDUALLY ON PAPERS AND EXAMINATIONS, ORALLY OR IN WRITING?	4.25	3.50	-0.75
28	TO WHAT EXTENT DID YOUR INSTRUCTOR SEEM TO KEEP IN TOUCH WITH THE PROGRESS OF THE CLASS?	4.50	4.00	-0.50
29	TO WHAT EXTENT DID YOUR INSTRUCTOR MAINTAIN CONTINUITY FROM ONE PRESENTATION TO THE NEXT?	3.75	3.50	-0.25
30	TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE HIMSELF ACCESSIBLE TO STUDENTS OUTSIDE OF CLASS?	4.50	4.00	-0.50
31	TO WHAT EXTENT DID YOUR INSTRUCTOR INVITE CRITICISM OF HIS OWN IDEAS?	4.75	4.00	-0.75
32	TO WHAT EXTENT DID YOUR INSTRUCTOR SHOW INTEREST AND CONCERN FOR THE QUALITY OF HIS TEACHING?	4.75	5.00	0.25
33	TO WHAT EXTENT DID YOUR INSTRUCTOR DEMONSTRATE A GENUINE INTEREST IN STUDENTS VIA QUESTIONS AND COMMENTS?	3.50	3.50	0.0
34	TO WHAT EXTENT DID YOUR INSTRUCTOR EXPRESS ENTHUSIASM IN HIS SUBJECT?	3.25	4.25	1.00
35	TO WHAT EXTENT DID YOUR INSTRUCTOR ENCOURAGE STUDENTS TO SHARE THEIR KNOWLEDGE AND EXPERIENCE?	3.75	4.00	0.25

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: CED 159
TITLE: STYLES OF PROBLEM SOLVING
SECTION: 1
QUARTER: WINTER
YEAR: 1972
INSTRUCTOR(S): C I
35 QUESTIONS
14 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
1	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING THAT YOU WOULD RECOMMEND IT TO OTHERS WITH INTERESTS SIMILAR TO YOUR OWN?	4.86	4.79	-0.07
2	TO WHAT EXTENT HAS THIS COURSE BEEN CHALLENGING TO YOU INTELLECTUALLY?	4.71	4.71	0.0
3	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR PERSONAL (PSYCHOLOGICAL AND SOCIAL) DEVELOPMENT?	5.00	5.00	0.0
4	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR ACADEMIC PLANS?	4.14	2.43	-1.71
5	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING YOU WANTED IT TO LAST LONGER?	3.57	3.71	0.14
6	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOU PROFESSIONAL PLANS?	3.21	3.21	0.0
7	TO WHAT EXTENT HAS THIS COURSE PROVIDED YOU WITH AN OPPORTUNITY TO WORK ON A PROJECT OR PAPER WHICH YOU CONSIDER MEANINGFUL?	4.21	3.79	-0.43
8	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE ASSUMPTIONS--STATED, UNSTATED, SUPPORTED, UNSUPPORTED, AND IRRELEVANT?	4.07	3.71	-0.36
9	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL CURIOSITY--INTEREST IN DISCOVERING AND UNDERSTANDING PROBLEMS?	4.57	4.64	0.07
10	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DEFINE PROBLEMS--BREAKING INTO ELEMENTS, FORMULATING RELATIONSHIPS AND QUESTIONS WHICH ARE TESTABLE?	4.29	3.71	-0.57
11	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO SELECT INFORMATION RELEVANT TO THE PROBLEM--DISTINGUISHING RELIABLE INFORMATION AND SOURCES?	4.21	3.79	-0.43
12	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP OPEN-MINDEDNESS--WITHHOLDING JUDGEMENT, EXAMINING CONTRARY VIEWS, CHANGING ONE'S OPINION IN THE LIGHT OF FACTUAL EVIDENCE?	4.43	4.07	-0.36

COURSE/INSTRUCTOR EVALUATION

COURSE NUMBER: CED 159
TITLE: STYLES OF PROBLEM SOLVING
SECTION: 1
QUARTER: WINTER
YEAR: 1972
INSTRUCTOR(S): C , T
35 QUESTIONS
14 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
13	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL HONESTY AND OBJECTIVITY--SEEKING THE BEST POSSIBLE ANSWERS, ACCEPTING THE CONSEQUENCES OF INQUIRY AND REPORTING THE FINDINGS ACCURATELY AND WITHOUT INTENTIONAL DISTORTION?	4.29	4.00	-0.29
14	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DRAW CONCLUSIONS FROM THE FACTS AND ASSUMPTIONS?	4.14	3.64	-0.50
15	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE PROBLEMS ON YOUR OWN?	4.50	4.00	-0.50
16	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO FIND APPLICATIONS FOR CONCLUSIONS?	3.86	2.79	-1.07
17	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE THE BASIC PRINCIPLES OF THE SUBJECT CLEAR?	3.79	3.21	-0.57
18	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS THE PRACTICAL SIGNIFICANCE AND SOCIAL IMPLICATIONS OF THE SUBJECT?	3.29	2.43	-0.86
19	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ILLUSTRATE IDEAS WITH EXAMPLES?	4.14	3.50	-0.64
20	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS RECENT DEVELOPMENTS IN THE FIELD?	1.36	1.64	0.29
21	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR STIMULATE YOUR IMAGINATION?	4.43	4.36	-0.07
22	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS OBJECTIVELY POINTS OF VIEW OTHER THAN HIS OWN?	4.07	3.43	-0.64
23	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR IDENTIFY WHAT HE CONSIDERED IMPORTANT?	4.36	4.36	0.0

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: CED 159
TITLE: STYLES OF PROBLEM SOLVING
SECTION: 1
QUARTER: WINTER
YEAR: 1972
INSTRUCTOR(S): C . T
35 QUESTIONS
14 RESPONDING STUDENTS

RESPONSE KEYS:
0; DON'T KNOW OR DOES NOT APPLY
1; LITTLE OR NONE
2; SOME
3; A MODERATE AMOUNT
4; QUITE A BIT
5; VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
24	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ISOLATE THE ASSUMPTIONS BEHIND A COMMENT?	3.64	3.57	-0.07
25	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR CONTRIBUTE INSIGHTS WITHOUT DELIVERING LENGTHY MONOLOGUES?	4.29	3.93	-0.36
26	TO WHAT EXTENT DID YOUR INSTRUCTOR INDICATE WHERE USEFUL ADDITIONAL INFORMATION COULD BE FOUND?	2.93	2.57	-0.36
27	TO WHAT EXTENT DID YOUR INSTRUCTOR COMMENT INDIVIDUALLY ON PAPERS AND EXAMINATIONS, ORALLY OR IN WRITING?	3.14	2.93	-0.21
28	TO WHAT EXTENT DID YOUR INSTRUCTOR SEEM TO KEEP IN TOUCH WITH THE PROGRESS OF THE CLASS?	4.57	4.29	-0.29
29	TO WHAT EXTENT DID YOUR INSTRUCTOR MAINTAIN CONTINUITY FROM ONE PRESENTATION TO THE NEXT?	3.93	4.14	0.21
30	TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE HIMSELF ACCESSIBLE TO STUDENTS OUTSIDE OF CLASS?	4.50	4.57	0.07
31	TO WHAT EXTENT DID YOUR INSTRUCTOR INVITE CRITICISM OF HIS OWN IDEAS?	4.64	4.36	-0.29
32	TO WHAT EXTENT DID YOUR INSTRUCTOR SHOW INTEREST AND CONCERN FOR THE QUALITY OF HIS TEACHING?	4.36	4.79	0.43
33	TO WHAT EXTENT DID YOUR INSTRUCTOR DEMONSTRATE A GENUINE INTEREST IN STUDENTS VIA QUESTIONS AND COMMENTS?	4.70	4.57	-0.21
34	TO WHAT EXTENT DID YOUR INSTRUCTOR EXPRESS ENTHUSIASM IN HIS SUBJECT?	4.50	4.36	-0.0
35	TO WHAT EXTENT DID YOUR INSTRUCTOR ENCOURAGE STUDENTS TO SHARE THEIR KNOWLEDGE AND EXPERIENCE?	4.50	4.64	0.14

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: ARCH 204
TITLE: IMAGING THE FUTURE
SECTION: 1
QUARTER: SUMMER
YEAR: 1972
INSTRUCTOR(S): A.
35 QUESTIONS
6 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
1	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING THAT YOU WOULD RECOMMEND IT TO OTHERS WITH INTERESTS SIMILAR TO YOUR OWN?	3.83	3.50	-0.33
2	TO WHAT EXTENT HAS THIS COURSE BEEN CHALLENGING TO YOU INTELLECTUALLY?	4.50	4.17	-0.33
3	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR PERSONAL (PSYCHOLOGICAL AND SOCIAL) DEVELOPMENT?	4.83	4.00	-0.83
4	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR ACADEMIC PLANS?	4.33	4.17	-0.17
5	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING YOU WANTED IT TO LAST LONGER?	4.00	4.17	0.17
6	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOU PROFESSIONAL PLANS?	4.17	3.67	-0.50
7	TO WHAT EXTENT HAS THIS COURSE PROVIDED YOU WITH AN OPPORTUNITY TO WORK ON A PROJECT OR PAPER WHICH YOU CONSIDER MEANINGFUL?	4.17	3.67	-0.50
8	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE ASSUMPTIONS--STATED, UNSTATED, SUPPORTED, UNSUPPORTED, AND IRRELEVANT?	4.33	3.17	-1.17
9	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL CURIOSITY--INTEREST IN DISCOVERING AND UNDERSTANDING PROBLEMS?	4.83	4.33	-0.50
10	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DEFINE PROBLEMS--BREAKING INTO ELEMENTS, FORMULATING RELATIONSHIPS AND QUESTIONS WHICH ARE TESTABLE?	4.83	3.50	-1.33
11	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO SELECT INFORMATION RELEVANT TO THE PROBLEM--DISTINGUISHING RELIABLE INFORMATION AND SOURCES?	4.50	3.67	-0.83
12	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP OPEN-MINDEDNESS--WITHHOLDING JUDGEMENT, EXAMINING CONTRARY VIEWS, CHANGING ONE'S OPINION IN THE LIGHT OF FACTUAL EVIDENCE?	4.83	4.33	-0.50

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: ARCH 204
TITLE: IMAGING THE FUTURE
SECTION: 1
QUARTER: SUMMER
YEAR: 1972
INSTRUCTOR(S): A
35 QUESTIONS
6 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
13	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL HONESTY AND OBJECTIVITY--SEEKING THE BEST POSSIBLE ANSWERS, ACCEPTING THE CONSEQUENCES OF INQUIRY AND REPORTING THE FINDINGS ACCURATELY AND WITHOUT INTENTIONAL DISTORTION?	4.33	3.83	-0.50
14	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DRAW CONCLUSIONS FROM THE FACTS AND ASSUMPTIONS?	4.50	3.33	-1.17
15	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE PROBLEMS ON YOUR OWN?	4.67	3.33	-1.33
16	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO FIND APPLICATIONS FOR CONCLUSIONS?	4.17	3.50	-0.67
17	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE THE BASIC PRINCIPLES OF THE SUBJECT CLEAR?	4.00	3.50	-0.50
18	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS THE PRACTICAL SIGNIFICANCE AND SOCIAL IMPLICATIONS OF THE SUBJECT?	5.00	4.33	-0.67
19	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ILLUSTRATE IDEAS WITH EXAMPLES?	4.17	3.67	-0.50
20	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS RECENT DEVELOPMENTS IN THE FIELD?	4.67	4.17	-0.50
21	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR STIMULATE YOUR IMAGINATION?	4.83	4.17	-0.67
22	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS OBJECTIVELY POINTS OF VIEW OTHER THAN HIS OWN?	4.33	4.17	-0.17
23	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR IDENTIFY WHAT HE CONSIDERED IMPORTANT?	3.67	3.33	-0.33

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: ARCH 204
TITLE: IMAGING THE FUTURE
SECTION: 1
QUARTER: SUMMER
YEAR: 1972
INSTRUCTOR(S): A
35 QUESTIONS
6 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
24	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ISOLATE THE ASSUMPTIONS BEHIND A COMMENT?	4.33	4.33	0.0
25	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR CONTRIBUTE INSIGHTS WITHOUT DELIVERING LENGTHY MONOLOGUES?	4.33	4.50	0.17
26	TO WHAT EXTENT DID YOUR INSTRUCTOR INDICATE WHERE USEFUL ADDITIONAL INFORMATION COULD BE FOUND?	4.83	4.33	-0.50
27	TO WHAT EXTENT DID YOUR INSTRUCTOR COMMENT INDIVIDUALLY ON PAPERS AND EXAMINATIONS, ORALLY OR IN WRITING?	3.50	2.00	-1.50
28	TO WHAT EXTENT DID YOUR INSTRUCTOR SEEM TO KEEP IN TOUCH WITH THE PROGRESS OF THE CLASS?	3.67	3.00	-0.67
29	TO WHAT EXTENT DID YOUR INSTRUCTOR MAINTAIN CONTINUITY FROM ONE PRESENTATION TO THE NEXT?	3.33	3.00	-0.33
30	TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE HIMSELF ACCESSIBLE TO STUDENTS OUTSIDE OF CLASS?	3.33	2.67	-0.67
31	TO WHAT EXTENT DID YOUR INSTRUCTOR INVITE CRITICISM OF HIS OWN IDEAS?	4.67	4.33	-0.33
32	TO WHAT EXTENT DID YOUR INSTRUCTOR SHOW INTEREST AND CONCERN FOR THE QUALITY OF HIS TEACHING?	4.33	4.00	-0.33
33	TO WHAT EXTENT DID YOUR INSTRUCTOR DEMONSTRATE A GENUINE INTEREST IN STUDENTS VIA QUESTIONS AND COMMENTS?	4.67	4.67	0.0
34	TO WHAT EXTENT DID YOUR INSTRUCTOR EXPRESS ENTHUSIASM IN HIS SUBJECT?	4.83	4.83	0.0
35	TO WHAT EXTENT DID YOUR INSTRUCTOR ENCOURAGE STUDENTS TO SHARE THEIR KNOWLEDGE AND EXPERIENCE?	4.67	3.83	-0.83

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: CED 162
TITLE: COMMUNITY AS PEOPLE
SECTION: 1
QUARTER: SUMMER
YEAR: 1972
INSTRUCTOR(S): N C
35 QUESTIONS
8 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
1	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING THAT YOU WOULD RECOMMEND IT TO OTHERS WITH INTERESTS SIMILAR TO YOUR OWN?	4.38	4.63	0.25
2	TO WHAT EXTENT HAS THIS COURSE BEEN CHALLENGING TO YOU INTELLECTUALLY?	4.63	3.63	-1.00
3	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR PERSONAL (PSYCHOLOGICAL AND SOCIAL) DEVELOPMENT?	4.38	3.38	-1.00
4	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR ACADEMIC PLANS?	4.13	3.38	-0.75
5	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING YOU WANTED IT TO LAST LONGER?	4.50	3.63	-0.88
6	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOU PROFESSIONAL PLANS?	4.38	3.75	-0.63
7	TO WHAT EXTENT HAS THIS COURSE PROVIDED YOU WITH AN OPPORTUNITY TO WORK ON A PROJECT OR PAPER WHICH YOU CONSIDER MEANINGFUL?	4.88	4.75	-0.13
8	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE ASSUMPTIONS--STATED, UNSTATED, SUPPORTED, UNSUPPORTED, AND IRRELEVANT?	4.38	2.88	-1.50
9	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL CURIOSITY--INTEREST IN DISCOVERING AND UNDERSTANDING PROBLEMS?	4.75	4.13	-0.63
10	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DEFINE PROBLEMS--BREAKING INTO ELEMENTS, FORMULATING RELATIONSHIPS AND QUESTIONS WHICH ARE TESTABLE?	5.00	3.63	-1.38
11	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO SELECT INFORMATION RELEVANT TO THE PROBLEM--DISTINGUISHING RELIABLE INFORMATION AND SOURCES?	5.00	3.63	-1.38
12	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP OPEN-MINDEDNESS--WITHHOLDING JUDGEMENT, EXAMINING CONTRARY VIEWS, CHANGING ONE'S OPINION IN THE LIGHT OF FACTUAL EVIDENCE?	4.88	3.25	-1.63

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: CED 162
TITLE: COMMUNITY AS PEOPLE
SECTION: 1
QUARTER: SUMMER
YEAR: 1972
INSTRUCTOR(S): N C
35 QUESTIONS
8 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
13	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL HONESTY AND OBJECTIVITY--SEEKING THE BEST POSSIBLE ANSWERS, ACCEPTING THE CONSEQUENCES OF INQUIRY AND REPORTING THE FINDINGS ACCURATELY AND WITHOUT INTENTIONAL DISTORTION?	5.00	3.13	-1.88
14	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DRAW CONCLUSIONS FROM THE FACTS AND ASSUMPTIONS?	4.50	3.13	-1.38
15	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE PROBLEMS ON YOUR OWN?	4.63	3.25	-1.38
16	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO FIND APPLICATIONS FOR CONCLUSIONS?	4.63	3.13	-1.50
17	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE THE BASIC PRINCIPLES OF THE SUBJECT CLEAR?	4.75	3.75	-1.00
18	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS THE PRACTICAL SIGNIFICANCE AND SOCIAL IMPLICATIONS OF THE SUBJECT?	4.88	4.25	-0.63
19	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ILLUSTRATE IDEAS WITH EXAMPLES?	4.50	4.25	-0.25
20	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS RECENT DEVELOPMENTS IN THE FIELD?	4.63	4.00	-0.63
21	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR STIMULATE YOUR IMAGINATION?	4.50	3.38	-1.13
22	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS OBJECTIVELY POINTS OF VIEW OTHER THAN HIS OWN?	4.25	2.88	-1.38
23	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR IDENTIFY WHAT HE CONSIDERED IMPORTANT?	4.50	3.88	-0.63

COURSE/INSTRUCTOR EVALUATION

COURSE NUMBER: CED 162
TITLE: COMMUNITY AS PEOPLE
SECTION: 1
QUARTER: SUMMER
YEAR: 1972
INSTRUCTOR(S): N C
35 QUESTIONS
8 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
24	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ISOLATE THE ASSUMPTIONS BEHIND A COMMENT?	4.25	3.63	-0.63
25	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR CONTRIBUTE INSIGHTS WITHOUT DELIVERING LENGTHY MONOLOGUES?	4.13	3.38	-0.75
26	TO WHAT EXTENT DID YOUR INSTRUCTOR INDICATE WHERE USEFUL ADDITIONAL INFORMATION COULD BE FOUND?	3.88	3.63	-0.25
27	TO WHAT EXTENT DID YOUR INSTRUCTOR COMMENT INDIVIDUALLY ON PAPERS AND EXAMINATIONS, ORALLY OR IN WRITING?	4.00	2.88	-1.13
28	TO WHAT EXTENT DID YOUR INSTRUCTOR SEEM TO KEEP IN TOUCH WITH THE PROGRESS OF THE CLASS?	4.63	3.75	-0.88
29	TO WHAT EXTENT DID YOUR INSTRUCTOR MAINTAIN CONTINUITY FROM ONE PRESENTATION TO THE NEXT?	4.25	2.88	-1.38
30	TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE HIMSELF ACCESSIBLE TO STUDENTS OUTSIDE OF CLASS?	4.88	3.88	-1.00
31	TO WHAT EXTENT DID YOUR INSTRUCTOR INVITE CRITICISM OF HIS OWN IDEAS?	4.63	3.63	-1.00
32	TO WHAT EXTENT DID YOUR INSTRUCTOR SHOW INTEREST AND CONCERN FOR THE QUALITY OF HIS TEACHING?	4.50	3.13	-1.38
33	TO WHAT EXTENT DID YOUR INSTRUCTOR DEMONSTRATE A GENUINE INTEREST IN STUDENTS VIA QUESTIONS AND COMMENTS?	4.88	4.13	-0.75
34	TO WHAT EXTENT DID YOUR INSTRUCTOR EXPRESS ENTHUSIASM IN HIS SUBJECT?	4.88	4.88	0.0
35	TO WHAT EXTENT DID YOUR INSTRUCTOR ENCOURAGE STUDENTS TO SHARE THEIR KNOWLEDGE AND EXPERIENCE?	5.00	4.25	-0.75

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: CED 158
TITLE: VISUAL THINKING
SECTION: 1
QUARTER: SUMMER
YEAR: 1972
INSTRUCTOR(S): C R
35 QUESTIONS
10 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
1	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING THAT YOU WOULD RECOMMEND IT TO OTHERS WITH INTERESTS SIMILAR TO YOUR OWN?	4.90	4.40	-0.50
2	TO WHAT EXTENT HAS THIS COURSE BEEN CHALLENGING TO YOU INTELLECTUALLY?	4.70	4.20	-0.50
3	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR PERSONAL (PSYCHOLOGICAL AND SOCIAL) DEVELOPMENT?	5.00	4.60	-0.40
4	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR ACADEMIC PLANS?	3.90	3.70	-0.20
5	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING YOU WANTED IT TO LAST LONGER?	4.80	4.40	-0.40
6	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOU PROFESSIONAL PLANS?	3.80	3.00	-0.80
7	TO WHAT EXTENT HAS THIS COURSE PROVIDED YOU WITH AN OPPORTUNITY TO WORK ON A PROJECT OR PAPER WHICH YOU CONSIDER MEANINGFUL?	3.90	3.20	-0.70
8	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE ASSUMPTIONS--STATED, UNSTATED, SUPPORTED, UNSUPPORTED, AND IRRELEVANT?	3.60	2.80	-0.80
9	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL CURIOSITY--INTEREST IN DISCOVERING AND UNDERSTANDING PROBLEMS?	4.80	4.20	-0.60
10	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DEFINE PROBLEMS--BREAKING INTO ELEMENTS, FORMULATING RELATIONSHIPS AND QUESTIONS WHICH ARE TESTABLE?	3.60	3.10	-0.50
11	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO SELECT INFORMATION RELEVANT TO THE PROBLEM--DISTINGUISHING RELIABLE INFORMATION AND SOURCES?	3.80	3.00	-0.80
12	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP OPEN-MINDEDNESS--WITHHOLDING JUDGEMENT, EXAMINING CONTRARY VIEWS, CHANGING ONE'S OPINION IN THE LIGHT OF FACTUAL EVIDENCE?	4.90	4.70	-0.20

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: CED 158
TITLE: VISUAL THINKING
SECTION: 1
QUARTER: SUMMER
YEAR: 1972
INSTRUCTOR(S): C R
35 QUESTIONS
10 RESPONDING STUDENTS

RESPONSE KEYS;
0; DON'T KNOW OR DOES NOT APPLY
1; LITTLE OR NONE
2; SOME
3; A MODERATE AMOUNT
4; QUITE A BIT
5; VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
13	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL HONESTY AND OBJECTIVITY--SEEKING THE BEST POSSIBLE ANSWERS, ACCEPTING THE CONSEQUENCES OF INQUIRY AND REPORTING THE FINDINGS ACCURATELY AND WITHOUT INTENTIONAL DISTORTION?	4.50	4.00	-0.50
14	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DRAW CONCLUSIONS FROM THE FACTS AND ASSUMPTIONS?	3.50	3.10	-0.40
15	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE PROBLEMS ON YOUR OWN?	4.60	4.20	-0.40
16	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO FIND APPLICATIONS FOR CONCLUSIONS?	4.30	3.60	-0.70
17	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE THE BASIC PRINCIPLES OF THE SUBJECT CLEAR?	4.30	3.60	-0.70
18	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS THE PRACTICAL SIGNIFICANCE AND SOCIAL IMPLICATIONS OF THE SUBJECT?	4.20	3.80	-0.40
19	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ILLUSTRATE IDEAS WITH EXAMPLES?	4.60	4.30	-0.30
20	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS RECENT DEVELOPMENTS IN THE FIELD?	4.40	4.20	-0.20
21	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR STIMULATE YOUR IMAGINATION?	5.00	4.90	-0.10
22	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS OBJECTIVELY POINTS OF VIEW OTHER THAN HIS OWN?	4.60	3.70	-0.90
23	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR IDENTIFY WHAT HE CONSIDERED IMPORTANT?	3.90	4.10	0.20

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: CED 159
TITLE: VISUAL THINKING
SECTION: 1
QUARTER: SUMMER
YEAR: 1972
INSTRUCTOR(S): C R
35 QUESTIONS
10 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUES	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
24	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ISOLATE THE ASSUMPTIONS BEHIND A COMMENT?	4.40	3.80	-0.60
25	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR CONTRIBUTE INSIGHTS WITHOUT DELIVERING LENGTHY MONOLOGUES?	4.80	3.50	-1.30
26	TO WHAT EXTENT DID YOUR INSTRUCTOR INDICATE WHERE USEFUL ADDITIONAL INFORMATION COULD BE FOUND?	4.70	4.80	0.10
27	TO WHAT EXTENT DID YOUR INSTRUCTOR COMMENT INDIVIDUALLY ON PAPERS AND EXAMINATIONS, ORALLY OR IN WRITING?	4.90	4.30	-0.60
28	TO WHAT EXTENT DID YOUR INSTRUCTOR SEEM TO KEEP IN TOUCH WITH THE PROGRESS OF THE CLASS?	4.40	4.00	-0.40
29	TO WHAT EXTENT DID YOUR INSTRUCTOR MAINTAIN CONTINUITY FROM ONE PRESENTATION TO THE NEXT?	3.90	3.50	-0.40
30	TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE HIMSELF ACCESSIBLE TO STUDENTS OUTSIDE OF CLASS?	5.00	4.80	-0.20
31	TO WHAT EXTENT DID YOUR INSTRUCTOR INVITE CRITICISM OF HIS OWN IDEAS?	4.60	4.00	-0.60
32	TO WHAT EXTENT DID YOUR INSTRUCTOR SHOW INTEREST AND CONCERN FOR THE QUALITY OF HIS TEACHING?	4.80	4.90	0.10
33	TO WHAT EXTENT DID YOUR INSTRUCTOR DEMONSTRATE A GENUINE INTEREST IN STUDENTS VIA QUESTIONS AND COMMENTS?	4.90	4.90	0.0
34	TO WHAT EXTENT DID YOUR INSTRUCTOR EXPRESS ENTHUSIASM IN HIS SUBJECT?	5.00	4.90	-0.10
35	TO WHAT EXTENT DID YOUR INSTRUCTOR ENCOURAGE STUDENTS TO SHARE THEIR KNOWLEDGE AND EXPERIENCE?	4.90	4.80	-0.10

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: CED 160
TITLE: RATIONAL APPROACHES
SECTION: 1
QUARTER: SUMMER
YEAR: 1972
INSTRUCTOR(S): J
35 QUESTIONS
10 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
1	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING THAT YOU WOULD RECOMMEND IT TO OTHERS WITH INTERESTS SIMILAR TO YOUR OWN?	3.30	2.40	-0.90
2	TO WHAT EXTENT HAS THIS COURSE BEEN CHALLENGING TO YOU INTELLECTUALLY?	4.80	3.30	-1.50
3	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR PERSONAL (PSYCHOLOGICAL AND SOCIAL) DEVELOPMENT?	3.70	2.40	-1.30
4	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOUR ACADEMIC PLANS?	3.70	2.40	-1.30
5	TO WHAT EXTENT HAS THIS COURSE BEEN SO INTERESTING YOU WANTED IT TO LAST LONGER?	3.70	1.80	-1.90
6	TO WHAT EXTENT HAS THIS COURSE BEEN VALUABLE TO YOU PROFESSIONAL PLANS?	3.80	2.20	-1.60
7	TO WHAT EXTENT HAS THIS COURSE PROVIDED YOU WITH AN OPPORTUNITY TO WORK ON A PROJECT OR PAPER WHICH YOU CONSIDER MEANINGFUL?	4.80	4.30	-0.50
8	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE ASSUMPTIONS--STATED, UNSTATED, SUPPORTED, UNSUPPORTED, AND IRRELEVANT?	4.20	3.00	-1.20
9	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL CURIOSITY--INTEREST IN DISCOVERING AND UNDERSTANDING PROBLEMS?	4.60	3.60	-1.00
10	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DEFINE PROBLEMS--BREAKING INTO ELEMENTS, FORMULATING RELATIONSHIPS AND QUESTIONS WHICH ARE TESTABLE?	4.80	3.50	-1.30
11	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO SELECT INFORMATION RELEVANT TO THE PROBLEM--DISTINGUISHING RELIABLE INFORMATION AND SOURCES?	4.50	3.50	-1.00
12	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP OPEN-MINDEDNESS--WITHHOLDING JUDGEMENT, EXAMINING CONTRARY VIEWS, CHANGING ONE'S OPINION IN THE LIGHT OF FACTUAL EVIDENCE?	4.30	3.10	-1.20

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: CED 160
TITLE: RATIONAL APPROACHES
SECTION: 1
QUARTER: SUMMER
YEAR: 1972
INSTRUCTOR(S): J
35 QUESTIONS
16 RESPONDING STUDENTS

RESPONSE KEYS:
0: DON'T KNOW OR DOES NOT APPLY
1: LITTLE OR NONE
2: SOME
3: A MODERATE AMOUNT
4: QUITE A BIT
5: VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
13	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP INTELLECTUAL HONESTY AND OBJECTIVITY--SEEKING THE BEST POSSIBLE ANSWERS, ACCEPTING THE CONSEQUENCES OF INQUIRY AND REPORTING THE FINDINGS ACCURATELY AND WITHOUT INTENTIONAL DISTORTION?	4.50	3.00	-1.50
14	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO DRAW CONCLUSIONS FROM THE FACTS AND ASSUMPTIONS?	4.80	3.60	-1.20
15	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO RECOGNIZE PROBLEMS ON YOUR OWN?	4.90	3.30	-1.60
16	TO WHAT EXTENT DID THIS COURSE AND INSTRUCTOR HELP YOU DEVELOP THE ABILITY TO FIND APPLICATIONS FOR CONCLUSIONS?	4.50	3.40	-1.10
17	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE THE BASIC PRINCIPLES OF THE SUBJECT CLEAR?	4.90	3.70	-1.20
18	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS THE PRACTICAL SIGNIFICANCE AND SOCIAL IMPLICATIONS OF THE SUBJECT?	4.60	3.30	-1.30
19	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ILLUSTRATE IDEAS WITH EXAMPLES?	4.60	4.30	-0.30
20	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS RECENT DEVELOPMENTS IN THE FIELD?	3.60	1.60	-2.00
21	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR STIMULATE YOUR IMAGINATION?	4.50	2.70	-1.90
22	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR DISCUSS OBJECTIVELY POINTS OF VIEW OTHER THAN HIS OWN?	4.40	2.40	-2.00
23	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR IDENTIFY WHAT HE CONSIDERED IMPORTANT?	4.10	4.00	-0.10

COURSE/INSTRUCTOR EVALUATION
COURSE NUMBER: CED 100
TITLE: RATIONAL APPROACHES
SECTION: 1
QUARTER: SUMMER
YEAR: 1972
INSTRUCTOR(S): J
35 QUESTIONS
10 RESPONDING STUDENTS

RESPONSE KEYS:
0; DON'T KNOW OR DOES NOT APPLY
1; LITTLE OR NONE
2; SOME
3; A MODERATE AMOUNT
4; QUITE A BIT
5; VERY MUCH

# QUEST	QUESTION	MN DES RESP	MN ACT RESP	MN A - D RSP DF
24	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR ISOLATE THE ASSUMPTIONS BEHIND A COMMENT?	4.30	3.50	-0.80
25	CONCERNING PRESENTATIONS AND DISCUSSIONS, TO WHAT EXTENT DID YOUR INSTRUCTOR CONTRIBUTE INSIGHTS WITHOUT DELIVERING LENGTHY MONOLOGUES?	4.10	3.30	-0.80
26	TO WHAT EXTENT DID YOUR INSTRUCTOR INDICATE WHERE USEFUL ADDITIONAL INFORMATION COULD BE FOUND?	4.60	3.80	-0.80
27	TO WHAT EXTENT DID YOUR INSTRUCTOR COMMENT INDIVIDUALLY ON PAPERS AND EXAMINATIONS, ORALLY OR IN WRITING?	4.40	2.40	-2.00
28	TO WHAT EXTENT DID YOUR INSTRUCTOR SEEM TO KEEP IN TOUCH WITH THE PROGRESS OF THE CLASS?	4.80	3.60	-1.20
29	TO WHAT EXTENT DID YOUR INSTRUCTOR MAINTAIN CONTINUITY FROM ONE PRESENTATION TO THE NEXT?	4.10	3.90	-0.20
30	TO WHAT EXTENT DID YOUR INSTRUCTOR MAKE HIMSELF ACCESSIBLE TO STUDENTS OUTSIDE OF CLASS?	4.70	4.40	-0.30
31	TO WHAT EXTENT DID YOUR INSTRUCTOR INVITE CRITICISM OF HIS OWN IDEAS?	3.90	3.40	-0.50
32	TO WHAT EXTENT DID YOUR INSTRUCTOR SHOW INTEREST AND CONCERN FOR THE QUALITY OF HIS TEACHING?	4.70	3.10	-1.60
33	TO WHAT EXTENT DID YOUR INSTRUCTOR DEMONSTRATE A GENUINE INTEREST IN STUDENTS VIA QUESTIONS AND COMMENTS?	4.40	4.40	0.0
34	TO WHAT EXTENT DID YOUR INSTRUCTOR EXPRESS ENTHUSIASM IN HIS SUBJECT?	4.80	4.10	-0.70
35	TO WHAT EXTENT DID YOUR INSTRUCTOR ENCOURAGE STUDENTS TO SHARE THEIR KNOWLEDGE AND EXPERIENCE?	3.70	3.70	0.0

TABLE III: STUDENT STATISTICS SUMMARY:

STUDENT 6

STUDENT I.D. CODE: AD000006

TOTAL RESPONSE STATISTICS:

DRM	DRVAR	DRSTD	DRMSE	ARM	ARVAR	ARSTD	ARMSE	MRDIF	%DIS
4.34	0.14	0.38	0.06	3.86	0.15	0.39	0.07	-0.49	57.14

TOTAL DESIRABLE RESPONSE FREQUENCIES AND PERCENTAGE FREQUENCIES:

CODE	0	1	2	3	4	5
FREQ	0	1	0	5	9	20
%FREQ	0.0	2.86	0.0	14.29	25.71	57.14

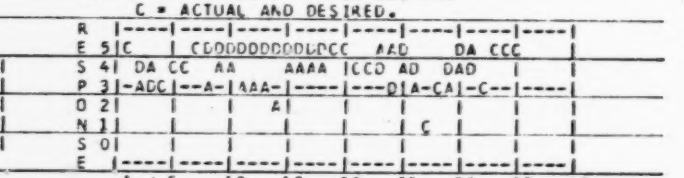
TOTAL ACTUAL RESPONSE FREQUENCIES AND PERCENTAGE FREQUENCIES:

CODE	0	1	2	3	4	5
FREQ	0	1	1	10	13	10
%FREQ	0.0	2.86	2.86	28.57	37.14	28.57

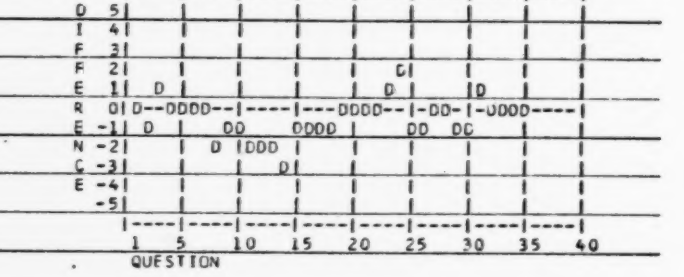
TOTAL RESPONSE FREQUENCIES AND PERCENTAGE FREQUENCIES:

CODE	0	1	2	3	4	5
FREQ	0	2	1	15	22	30
%FREQ	0.0	2.86	1.43	21.43	31.43	42.86

PLOT OF INDIVIDUAL RESPONSE PAIRS:
KEY: A = ACTUAL, D = DESIRED, AND
C = ACTUAL AND DESIRED.



PLOT OF INDIVIDUAL RESPONSE PAIRS DIFFERENCES:



INDIVIDUAL RESPONSE STATISTICS:

Q	DR	AR	RD	MR	Q	DR	AR	RD	MR	Q	DR	AR	RD	MR	Q	DR	AR	RD	MR	Q	DR	AR	RD	MR	Q	DR	AR	RD	MR
1	5	5	0	5.00	2	4	3	-1	3.50	3	3	4	1	3.50	4	3	3	0	3.00	5	4	4	0	4.00	6	4	4	0	4.00
7	5	5	0	5.00	8	5	3	-2	4.00	9	5	4	-1	4.50	10	5	4	-1	4.50	11	5	3	-2	4.00	12	5	3	-2	4.00
13	5	3	-2	4.00	14	5	2	-3	3.50	15	5	4	-1	4.50	16	5	4	-1	4.50	17	5	4	-1	4.50	18	5	4	-1	4.50
19	5	5	0	5.00	20	5	5	0	5.00	21	4	4	0	4.00	22	4	4	0	4.00	23	4	5	1	4.50	24	3	5	2	4.00
25	5	4	-1	4.50	26	4	3	-1	3.50	27	1	1	0	1.00	28	3	3	0	3.00	29	4	3	-1	3.50	30	5	4	-1	4.50
31	4	5	1	4.50	32	3	3	0	3.00	33	5	5	0	5.00	34	5	5	0	5.00	35	5	5	0	5.00					

APPENDIX 4

AVAILABILITY OF FACTOR ANALYSIS PACKAGES AT UCLA CAMPUS COMPUTING NETWORK (CCN) AND BASIC STATISTICAL SYSTEM DESIGN CONSIDERATIONS FOR THE CREATIVE PROBLEM-SOLVING PROGRAM EVALUATION SYSTEM

Kenneth Sime

June 1972

School of Architecture and Urban Planning
UCLA

At present, two general purpose statistical packages with factor analysis modules on the CCN IBM 360/91 are available:

1. Statistical Package for the Social Sciences (SPSS, subprogram FACTOR).
2. Biomedical Computer Programs (BMD, subprograms BMO3M and BMDX72).

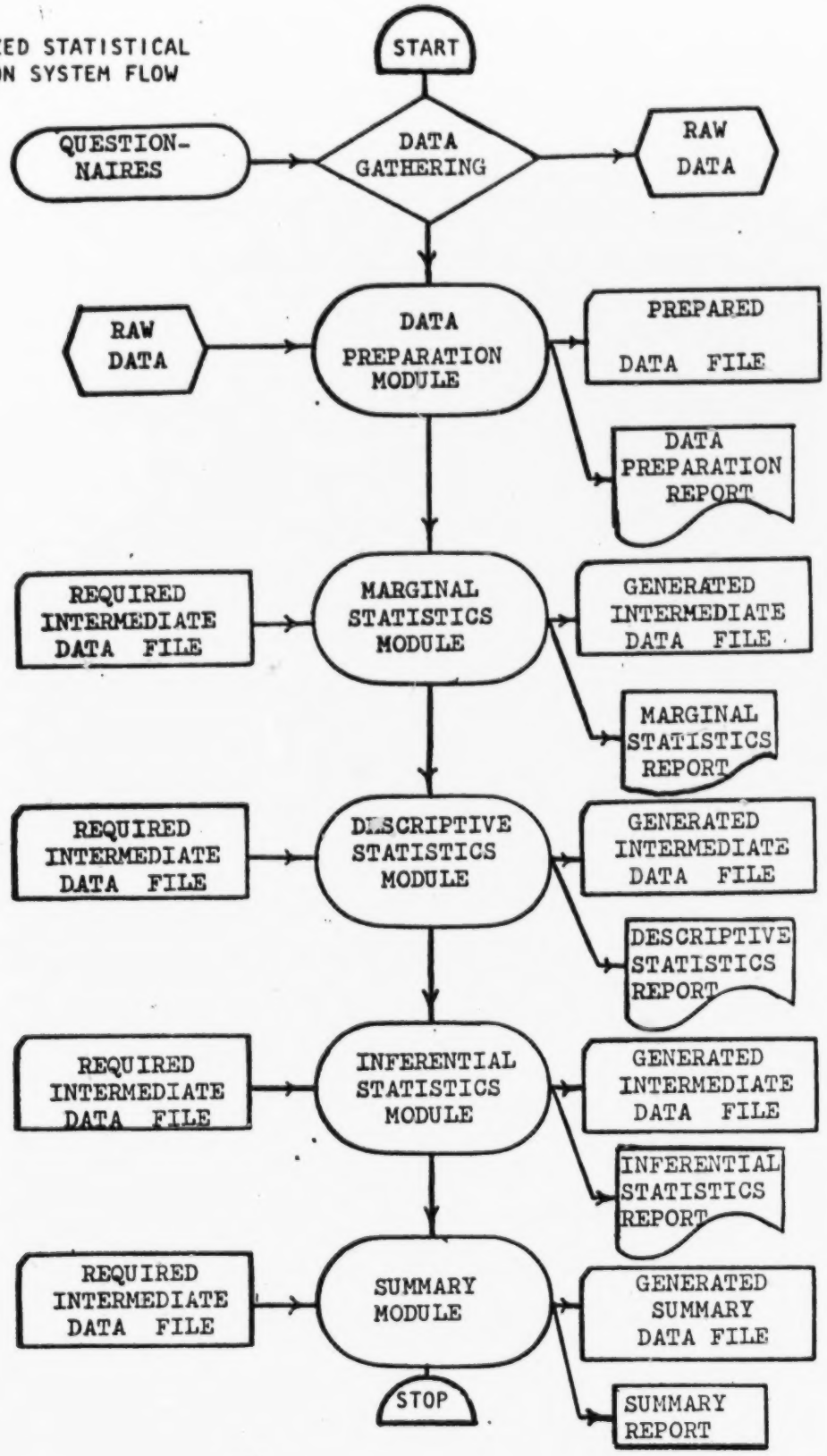
Unfortunately, the more powerful SPSS factor analysis module has a history of confirmed and suspected numerical instabilities. Consequently, FACTOR generated results are highly suspicious in terms of validity and reliability. The SPSS designers currently claim the factor analysis module has been stabilized. However, this claim has yet to be established by independent tests with any acceptable degree of assurance. Some UCLA investigators feel subprogram FACTOR is now reliable while others claim internal problems still exist. Therefore, in considering the probable high expenditure of computer funds and man-hours and the sensitivity of the decision-making requirements, the risk in utilizing subprogram FACTOR does not seem warranted. These circumstances are indeed unfortunate because SPSS control syntax and general structure have been designed with the non-computer-oriented user in mind.

While the BMD package is not as sophisticated as SPSS in terms of control syntax, the subprograms have a long history of numerical stability. Consequently, BMDO3M and BMDX72 may be used with a high degree of assurance. As far as numerical procedures and methodology are concerned, BMD and SPSS are equivalent; therefore, the user is not making a trade-off between reliability and procedural flexibility. For a brief description of the mathematical treatment, control syntax, and general rules of usage for FACTOR, BMDO3M, and BMDX72 refer to sections two, three, and four respectively.

A third choice is possible. With consideration given to the specific requirements of the user agency, the development of a separate factor analysis module may be feasible. If factor analysis only is considered as the key decision-making statistical method, then only the BMD or SPSS modules need be considered. However, if factor analysis will be only one of a series of methods, then a scheme or general system design has to be considered. Highlights of this general system are as follows:

1. Job Control Language (JCL)
2. User procedures and documentation
3. User control syntax
4. File generation and manipulation
5. Data gathering
6. Preliminary data preparation
7. Preliminary or marginal statistics
8. Descriptive statistics
9. Inferential statistics
10. Report generators
11. System transportability to a non-IBM configuration
12. Source code availability

GENERALIZED STATISTICAL EVALUATION SYSTEM FLOW CHART



With any program or system usage, very careful attention has to be given to the IBM 360 OS Job Control Language (JCL) as it applies to CCN's configuration. Nothing can be more frustrating to the new or inexperience user than trying to interact with the computer via a JCL scheme that is incomplete, not documents, or poorly designed. Consequently, the user must be provided with a transparent JCL scheme that is easily used and fault free. This requirement concerns both the use of existing packages and a tailored system.

User-oriented documentation describing all aspects of program or system usage is of paramount importance. Such a document should include the following:

1. JCL scheme.
2. Error messages and interpretation.
3. Data management.
4. File management.
5. System order and flow.
6. Module descriptions.
7. General and specific system description.

A prime cause of program or system failure with respect to the user is usually caused by a lack of or poorly edited documentation. Normally, the "cookbook" approach is the safest course.

Data gathering and preliminary preparation is normally the first required action by the user. The reliability of any statistical methodology is directly proportional to the care taken by the user in the generation of his data.

Preparation would include the following:

1. Identification.
2. Error scanning.
3. Sample selection.
4. "Massaging"

In many cases, computer funds and personnel time are optimized by a well designed use of file generation and usage. Most available statistical packages allow the use of intermediate data structures rather than starting with raw data in every case; a tailored configuration can be easily designed with the same facility. The following should be considered with reference to file management:

1. Identification
2. System/program interface.
3. Structure.
4. Device type.
5. Security.

The choice of marginal, descriptive, and inferential statistics depends entirely upon the user requirements. In this report, only factor analysis has been given consideration; however, other equally powerful methods are available. The particular methods chosen should allow the user to examine intermediate results before continuing to the next computational phase. This procedure gives the user a chance to detect and deal with subtle errors or suspicious results.

In considering the class or user involved and the application, generated reports must be carefully constructed in such a fashion as to

provide maximum information with relatively little paper work. This approach offsets the possibility of data "overkill." Unfortunately, the report format structure of BMD leaves much to be desired; SPSS is only a little more acceptable. Consequently, tailored reports will probably have to be developed no matter what pakcage is chosen or what system is developed.

If either BMD or SPSS is chosen, the question of source program availability becomes critical. In general, SPSS source code is not available to the general public. However, this department possesses the most current source modules for all available BMD subprograms. Although source code availability is less critical with respect to a generated system, considerable funds and time may be conserved by utilizing whatever available source programs may be easily integrated in the design phase.

System transportability need only be considered if implementation upon a machine configuration other than CCN's is required. Normally, the effects fall into the following areas.

1. JCL.
2. File management.
3. Source code compatability.

If the system is to remain resident at UCLA, full advantage can be taken of CCN's unique characteristics. However, if the system is also to be implemented elsewhere, overall design might well be generalized to a greater degree initially to avoid need for costly modifications by others in the future.

In summary, BMD03M or BMDX72 is more attractive than FACTOR in terms of numerical stability. However, the SPSS package has a more

flexible control syntax than BMD. With all things considered, the generation of a system as briefly described may, in fact, be the wisest choice. For a brief description of the SPSS and BMD subprograms availability, refer to sections five and six respectively.

APPENDIX 5

Selected scales from "Higher Education Measurement and Evaluation Kit, Field Edition 1972" prepared by the staff of the Higher Education Evaluation Program, Center for the Study of Evaluation, UCLA Graduate School of Education.

Note: The rationales and norms for the various scales are provided in the Kit.

EDUCATIONAL BENEFITS

Vocational

Directions: In thinking over your experiences in college up to now, to what extent do you feel that you have made progress or been benefited in each of the following areas? Indicate your rating by placing a check in the space under the number which best describes (a) the ACTUAL and (b) the PREFERABLE amounts of progress or benefit.

Key: 5 = Very much
4 = Quite a bit
3 = A moderate amount
2 = Some
1 = Little or none

	ACTUAL					PREFERABLE				
	5	4	3	2	1	5	4	3	2	1
1. Background and specification for further education in some professional, scientific or scholarly field.	–	–	–	–	–	–	–	–	–	–
2. Bases for improved social and economic status.	–	–	–	–	–	–	–	–	–	–
3. Vocabulary, terminology, and facts in various fields of knowledge.	–	–	–	–	–	–	–	–	–	–
4. Vocational training--skills and techniques directly applicable to a job.	–	–	–	–	–	–	–	–	–	–

(b)

EDUCATIONAL BENEFITS

Humanistic

Directions: In thinking over your experiences in college up to now, to what extent do you feel that you have made progress or been benefited in each of the following areas? Indicate your rating by placing a check in the space under the number which best describes (a) the ACTUAL and (b) the PREFERABLE amounts of progress or benefit.

Key: 5 = Very much
4 = Quite a bit
3 = A moderate amount
2 = Some
1 = Little or none

	ACTUAL					PREFERABLE				
	5	4	3	2	1	5	4	3	2	1
1. Awareness of different philosophies, cultures, and ways of life.										
2. Broadened literary acquaintance and appreciation.										
3. Aesthetic sensitivity--appreciation and enjoyment of art, music, drama.										
4. Writing and speaking--clear, correct, effective communication.										

(b)

EDUCATIONAL BENEFITS

Critical Thinking

Directions: In thinking over your experiences in college up to now, to what extent do you feel that you have made progress or been benefited in each of the following areas? Indicate your rating by placing a check in the space under the number which best describes (a) the ACTUAL and (b) the PREFERABLE amounts of progress or benefit.

Key: 5 = Very much
4 = Quite a bit
3 = A moderate amount
2 = Some
1 = Little or none

	ACTUAL					PREFERABLE				
	5	4	3	2	1	5	4	3	2	1
1. Develop intellectual curiosity--interest in discovering and understanding problems.	–	–	–	–	–	–	–	–	–	–
2. Develop intellectual honesty and objectivity--seeking the best possible answer, accepting the consequences of the inquiry, and reporting the findings accurately and without intentional distortion.	–	–	–	–	–	–	–	–	–	–
3. Develop open-mindedness--withholding judgment, examining contrary views, changing one's opinion in the light of the facts.	–	–	–	–	–	–	–	–	–	–
4. Develop a desire for persistence and order--searching for systematic relationships even when a solution is not immediately clear.	–	–	–	–	–	–	–	–	–	–
5. Develop the ability to define problems--breaking into elements, formulating relationships and questions which are testable.	–	–	–	–	–	–	–	–	–	–
6. Develop the ability to recognize assumptions--stated, unstated, supported, and irrelevant.	–	–	–	–	–	–	–	–	–	–
7. Develop the ability to select information relevant to the problems--distinguishing reliable information and sources.	–	–	–	–	–	–	–	–	–	–
8. Quantitative thinking--understanding concepts of probability, proportion, margin of error, etc.	–	–	–	–	–	–	–	–	–	–
9. Develop an understanding of the nature of science, experimentation, and theory.	–	–	–	–	–	–	–	–	–	–

(b)

EDUCATIONAL BENEFITS

Human Relations

Directions: In thinking over your experiences in college up to now, to what extent do you feel that you have made progress or been benefited in each of the following areas? Indicate your rating by placing a check in the space under the number which best describes (a) the ACTUAL and (b) the PREFERABLE amounts of progress or benefit.

Key: 5 = Very much
4 = Quite a bit
3 = A moderate amount
2 = Some
1 = Little or none

	ACTUAL					PREFERABLE				
	5	4	3	2	1	5	4	3	2	1
1. Personal development--understanding one's abilities and limitations, interests, and standards of behavior.	_	_	_	_	_	_	_	_	_	_
2. Development of friendships and loyalties of lasting value.	_	_	_	_	_	_	_	_	_	_
3. Appreciation of individuality and independence of thought and action.	_	_	_	_	_	_	_	_	_	_
4. Social development--experience and skill in relating to other people.	_	_	_	_	_	_	_	_	_	_
5. Tolerance and understanding of other people and their views.	_	_	_	_	_	_	_	_	_	_
6. Appreciation of religion--moral and ethical standards.	_	_	_	_	_	_	_	_	_	_

(b)

INVOLVEMENT IN CAMPUS REFORMS

Directions: Check (X) each activity you have engaged in during the past year.

During the past year:

___ 1. I voted in a campus election

___ 2. I campaigned for certain issues or people in a campus election

___ 3. I served on a student or college committee dealing with some campus reform--rules, courses, etc.

___ 4. I participated in student government

___ 5. I was an active member of a campus service organization

___ 6. I passed out literature on some campus issue

___ 7. I contacted an administrative officer about a campus issue

___ 8. I supported or participated in a group protest over some campus problem

STYLE OF LEARNING: ACADEMIC

Directions: Please check (X) each activity you engaged in during the most recent "typical" week.

During a typical week:

___ 1. I participated in a class discussion.

___ 2. I had a conversation, lasting a half-hour or longer, with one or more of my professors.

___ 3. I discussed with other students for an hour or longer the subject-matter of one or more of my courses.

___ 4. I spent a concentrated period of time--three hours or longer without interruption--studying for one of my courses.

___ 5. I studied at least four hours or longer during the weekend.

___ 6. I read a book related to one of my courses but that was not an assigned reading for the course.

___ 7. I spent five or more hours writing papers.

___ 8. I spent some time just browsing in the library or bookstore.

___ 9. I participated in a research project.

___10. I spent five hours or more looking up references in the library and taking notes.

STYLE OF LEARNING: EXPERIENTIAL

Directions: Check (X) each activity you have engaged in during the past term.

During the past term:

___ 1. I participated in a sensitivity group.

___ 2. I became well acquainted, personally and socially, with a student whose race is different than mine.

___ 3. I became well acquainted with a foreign student.

___ 4. I did some work with children or parents in a neighborhood different from mine.

___ 5. I had one or more long and private conversations with a professor or counselor.

___ 6. I was in an informal social gathering where students and faculty members came to know one another personally (not just superficially).

___ 7. I had the experience of being in a marathon encounter group.

___ 8. I helped a student who was having difficulty in a course.

VARIETY OF INSTRUCTIONAL AND LEARNING EXPERIENCES

Directions: For each of the following instructional or learning experiences, please indicate, by placing a check (X) in the appropriate column, (a) if you have had the experience, (b) if you have not but would like or not like to have the experience, and (c) if you have had the experience, the degree to which it was satisfying to you, using the key on the left.

Key: HS = highly satisfied
S = satisfied
N = neutral
D = dissatisfied
HD = highly dissatisfied

	HAVE HAD THIS EXPERIENCE	WOULD LIKE TO HAVE THIS EXPERIENCE		DEGREE OF SATISFACTION				
	yes	yes	no	HS	S	N	D	HD
1. Small class with instructor-led discussions	—	—	—	—	—	—	—	—
2. Large lecture classes	—	—	—	—	—	—	—	—
3. Lecture class with scheduled discussions sections	—	—	—	—	—	—	—	—
4. Video-taped lectures	—	—	—	—	—	—	—	—
5. Team teaching-two or more instructors teaching a course	—	—	—	—	—	—	—	—
6. Group projects, as part of course work	—	—	—	—	—	—	—	—
7. Individual research, as part of course work	—	—	—	—	—	—	—	—
8. Group research, as part of course work	—	—	—	—	—	—	—	—
9. Student-led discussion groups	—	—	—	—	—	—	—	—
10. Courses involving community experiences	—	—	—	—	—	—	—	—
11. Part or all of the course work conducted off-campus	—	—	—	—	—	—	—	—
12. Interdepartmental course (course involving instructors or materials from more than one department)	—	—	—	—	—	—	—	—
13. A laboratory course	—	—	—	—	—	—	—	—
14. Independent study	—	—	—	—	—	—	—	—

NOTABLE EXPERIENCES

What stands out in your mind so far about your college experience? (Check as many as apply.)

___ 1. Living away from home.

___ 2. Informal discussions with other students.

___ 3. Participation in sports.

___ 4. Being involved in some extra-curricular activity such as music, drama, politics, etc.

___ 5. The experience of leadership in some campus activity.

___ 6. Particular professors who have taken a personal interest in me.

___ 7. Particular professors who encouraged me in my work.

___ 8. Particular courses that opened up new interests for me.

___ 9. Some lectures that were particularly stimulating.

___ 10. Realizing what the demands of good scholarship really are.

AREAS AND AGENTS OF CHANGE DURING COLLEGE

Directions: For each of the following areas, please indicate how much you have changed while in college, and how much influence each of the "agents" have been in that change. Place a check (X) in the space below the number which most accurately reflects (A) the overall amount of change, and (B) the amount of influence each "agent" has had in bringing about that change.

Key: 3 = very much
2 = some
1 = little/none

AREAS OF CHANGE	A. OVERALL CHANGE	B. AGENTS OF CHANGE				
		Courses	Faculty	Fellow students	General maturity	Work experiences
	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1	3 2 1
1. Development of a world view and personal philosophy	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _
2. Development of an interest in new fields of learning	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _
3. Development of general thinking skills	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _
4. Development of an identity and sense of self-confidence	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _
5. Development of social skills	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _
6. Development of career plans and skills	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _
7. Development of a positive attitude towards this college	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _	_ _ _

GENERAL SATISFACTION WITH COLLEGE

1. How well do you like college? (Check One)

   __ 1. I don't like it.
   __ 2. I am more or less neutral about it.
   __ 3. I like it.
   __ 4. I am enthusiastic about it.

2. If you could start over again, would you go to the same college you are now attending? (Check One)

   __ 1. No, definitely
   __ 2. Probably no
   __ 3. Probably yes
   __ 4. Yes, definitely

3. Regardless of any vocational benefit college may have for you, do you think that being in college at this time in your life is a very important and beneficial experience? (Check One)

   __ 1. Definitely no
   __ 2. Generally no
   __ 3. Generally yes
   __ 4. Definitely yes

INTELLECTUAL ORIENTATION

Directions: We all have different preferences and personal characteristics. Beside each item, on the right, please indicate how characteristic the statement is of you. (Response key: VM = very much, QB = quite a bit, S = some, NA = not at all).

		VM	QB	S	NA
1.	Appreciate original work	—	—	—	—
2.	Enjoy dealing with new or strange ideas	—	—	—	—
3.	Like original research work	—	—	—	—
4.	Prefer to draw my own conclusions	—	—	—	—
5.	Like to think critically about theories	—	—	—	—
6.	Like people interested in ideas	—	—	—	—
7.	Often question authoritative opinion	—	—	—	—
8.	Experiment with ideas	—	—	—	—
9.	Enjoy seeking knowledge for its own sake	—	—	—	—
10.	Have diverse interests	—	—	—	—
11.	Play with a variety of ideas	—	—	—	—
12.	Use my imagination	—	—	—	—
13.	Try to connect seemingly unrelated ideas	—	—	—	—
14.	Examine ideas regardless of their practicality	—	—	—	—
15.	Discover new ways of doing things	—	—	—	—

CRITICAL THINKING ORIENTATION

Directions: We all have different preferences and personal characteristics. Beside each item, on the right, please indicate how characteristic the statement is of you. (Response key: VM = very much, QB = quite a bit, S = some, NA = not at all).

	VM	QB	S	NA
1. Enjoy solving long complex problems	—	—	—	—
2. Enjoy detecting faulty reasoning	—	—	—	—
3. Enjoy searching for systematic relationships even when a solution is not immediately apparent	—	—	—	—
4. Enjoy examining contrary views	—	—	—	—
5. Think about the accuracy of information I receive	—	—	—	—
6. Withhold my opinion until careful consideration of the facts and opposing opinions	—	—	—	—
7. Examine statements critically	—	—	—	—
8. Question people when they present new ideas	—	—	—	—
9. Like to contemplate the future of society	—	—	—	—
10. Argue different sides of an issue	—	—	—	—
11. Recognize the assumptions behind an argument	—	—	—	—
12. Like to seek the best possible answer, even if it takes quite a long time	—	—	—	—
13. Enjoy discovering new problems to think about	—	—	—	—

SCIENTIFIC ORIENTATION

Directions: We all have different preferences and personal characteristics. Beside each item, on the right, please indicate how characteristic the statement is of you. (Response key: VM = very much, QB = quite a bit, S = some, NA = not at all).

	VM	QB	S	NA
1. Enjoy science and mathematics	—	—	—	—
2. Enjoy discovering how things work	—	—	—	—
3. Looking at scientific displays	—	—	—	—
4. Solving puzzles	—	—	—	—
5. Like to formulate my own hypotheses about things	—	—	—	—
6. Like to take things apart to see how they work	—	—	—	—
7. Like to conduct my own experiments	—	—	—	—
8. Enjoy observing things and thinking about how they work or occur	—	—	—	—

FEELINGS ABOUT SELF

Directions: We all have different preferences and personal characteristics. Beside each item, on the right, please indicate how characteristic the statement is of you. (Response key: VM = very much, QB = quite a bit, S = some, NA = not at all).

	VM	QB	S	NA
1. When people say nice things about me, I find it difficult to believe they really mean it.	—	—	—	—
2. I look on most of the feelings and impulses I have toward people as being quite natural and acceptable.	—	—	—	—
3. I feel different from other people. I'd like to have the feeling of security that comes from knowing I'm not too different from others.	—	—	—	—
4. I am frequently bothered by feelings of inferiority.	—	—	—	—
5. In order to get along and be liked, I tend to be what people expect me to be rather than anything else.	—	—	—	—
6. I seem to have a real inner strength in handling things.	—	—	—	—
7. Very often I don't try to be friendly with people because I think they won't like me.	—	—	—	—
8. I feel that I'm a person of worth, on an equal plane with others.	—	—	—	—
9. I live too much by other peoples' standards.	—	—	—	—
10. When I have to address a group, I get self-conscious and have difficulty saying things well.	—	—	—	—

FEELINGS ABOUT OTHER PEOPLE

Directions: We all have different preferences and personal characteristics. Beside each item, on the right, please indicate how characteristic the statement is of you. (Response key: VM = very much, QB = quite a bit, S = some, NA = not at all).

		VM	QB	S	NA
1.	I find it hard to talk with people who hold opinions quite different from my own.	—	—	—	—
2.	I find it exciting to meet people quite different from myself.	—	—	—	—
3.	I can become so absorbed in the work I'm doing that it doesn't bother me not to have any intimate friends.	—	—	—	—
4.	I have found that people have to be pretty much like me if we are going to strike up a friendship.	—	—	—	—
5.	There are few times when I compliment people for their talents or jobs they've done.	—	—	—	—
6.	I try to get people to do what I want them to do, in one way or another.	—	—	—	—
7.	There's no sense in compromising. When people have values I don't like, I just don't care to have much to do with them..	—	—	—	—
8.	I enjoy doing little favors for people even if I don't know them well.	—	—	—	—
9.	I enjoy myself most when I'm alone, away from other people.	—	—	—	—
10.	I can be friendly with people who do things of which I don't approve.	—	—	—	—

FEELINGS ABOUT THE FUTURE

Directions: Below you will find some pairs of statements. Read each statement in the pair, then circle the letter of the pair that you most nearly agree with. Even though it may be difficult, please make a choice. On the right indicate how sure you feel about the choice you made.

Key: VS = very sure
MS = moderately sure
NS = not sure

			VS	MS	NS
1.	A	I have often found that what is going to happen will happen.	—	—	—
	B	Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.	—	—	—
2.	A	What happens to me is my own doing.	—	—	—
	B	Sometimes I feel that I don't have enough control over the direction my life is taking.	—	—	—
3.	A	When I make plans, I am almost certain that I can make them work.	—	—	—
	B	It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.	—	—	—
4.	A	In my case, getting what I want has little or nothing to do with luck.	—	—	—
	B	Many times we might just as well decide what to do by flipping a coin.	—	—	—
5.	A	Many times I feel that I have little influence over the things that happen to me.	—	—	—
	B	It is impossible for me to believe that chance or luck play an important role in my life.	—	—	—

GENERAL VALUES AND IDEOLOGIES

As you read each of the words listed below, what sort of associations come to your mind? Are these impromptu and immediate associations to the word (what it stands for in your mind) generally positive? generally negative? or mixed? After each word check your first reaction to it.

	Positive	Mixed	Negative		Positive	Mixed	Negative
1. Spirituality	___	___	___	16. Calculation	___	___	___
2. Perspective	___	___	___	17. Planning	___	___	___
3. Idealism	___	___	___	18. Prudence	___	___	___
4. Altruism	___	___	___	19. Loyalty	___	___	___
5. Mysticism	___	___	___	20. Tradition	___	___	___
6. Reverence	___	___	___	21. Organization	___	___	___
7. Freedom	___	___	___	22. Obedience	___	___	___
8. Spontaneity	___	___	___	23. Self-Sacrifice	___	___	___
9. Creativity	___	___	___	24. Justice	___	___	___
10. Participation	___	___	___	25. Salvation	___	___	___
11. Perceptiveness	___	___	___	26. Righteousness	___	___	___
12. Sensory awareness	___	___	___	27. Worship	___	___	___
13. Moderation	___	___	___	28. Dignity	___	___	___
14. Thoughtfulness	___	___	___	29. Submission	___	___	___
15. Flexibility	___	___	___	30. Revelation	___	___	___

SOCIETAL PRIORITIES

The statements below describe goals, purposes, and achievements that various people believe to be important in our society. What is your own view about the importance of these goals? And what view do you think is held by the majority of people in our society? To the left of each statement, indicate your priority by checking the appropriate space; and to the right of each statement, indicate what priority you think the majority of people would give to the statement.

YOUR PRIORITY						MAJORITY				
High				Low		High				Low
5	4	3	2	1		5	4	3	2	1
—	—	—	—	—	1. Promote harmony and understanding among nations.	—	—	—	—	—
—	—	—	—	—	2. Help each person develop and use his personal talents.	—	—	—	—	—
—	—	—	—	—	3. Enhance the health, education, and welfare of all people.	—	—	—	—	—
—	—	—	—	—	4. Achieve a balance between man and the environment.	—	—	—	—	—
—	—	—	—	—	5. Explore distant planets and outer space.	—	—	—	—	—
—	—	—	—	—	6. Increase man's control over nature through technology.	—	—	—	—	—
—	—	—	—	—	7. Develop the resources of the oceans.	—	—	—	—	—
—	—	—	—	—	8. Advance civilization through science and reason.	—	—	—	—	—
—	—	—	—	—	9. Help everyone attain material goods, economy, and status.	—	—	—	—	—
—	—	—	—	—	10. Enrich life through spiritual renewal and dedication.	—	—	—	—	—
—	—	—	—	—	11. Insure the military and economic strength of the nation.	—	—	—	—	—

EDUCATIONAL PRIORITIES

The statements below describe goals, purposes, and achievements that various people believe to be important in higher education. What is your own view about the importance of these goals for colleges and universities? And what view do you think is held by the majority of people in our society? To the left of each statement, indicate your priority by checking the appropriate space; and to the right of each statement, indicate what priority you think the majority of people would give to the statement.

YOUR PRIORITY						MAJORITY				
High				Low		High				Low
5	4	3	2	1		5	4	3	2	1
—	—	—	—	—	1. Prepare people for useful occupations.	—	—	—	—	—
—	—	—	—	—	2. Provide leaders for society.	—	—	—	—	—
—	—	—	—	—	3. Transmit basic cultural values.	—	—	—	—	—
—	—	—	—	—	4. Serve the economic needs of society.	—	—	—	—	—
—	—	—	—	—	5. Develop a person's self-awareness.	—	—	—	—	—
—	—	—	—	—	6. Broaden the students' perspective.	—	—	—	—	—
—	—	—	—	—	7. Enrich the students' life culturally.	—	—	—	—	—
—	—	—	—	—	8. Seek and disseminate new knowledge.	—	—	—	—	—
—	—	—	—	—	9. Help solve societal problems--pollution, etc.	—	—	—	—	—
—	—	—	—	—	10. Serve as a critic of the society.	—	—	—	—	—
—	—	—	—	—	11. Promote understanding among different peoples.	—	—	—	—	—
—	—	—	—	—	12. Assist students in developing a personal philosophy of life.	—	—	—	—	—